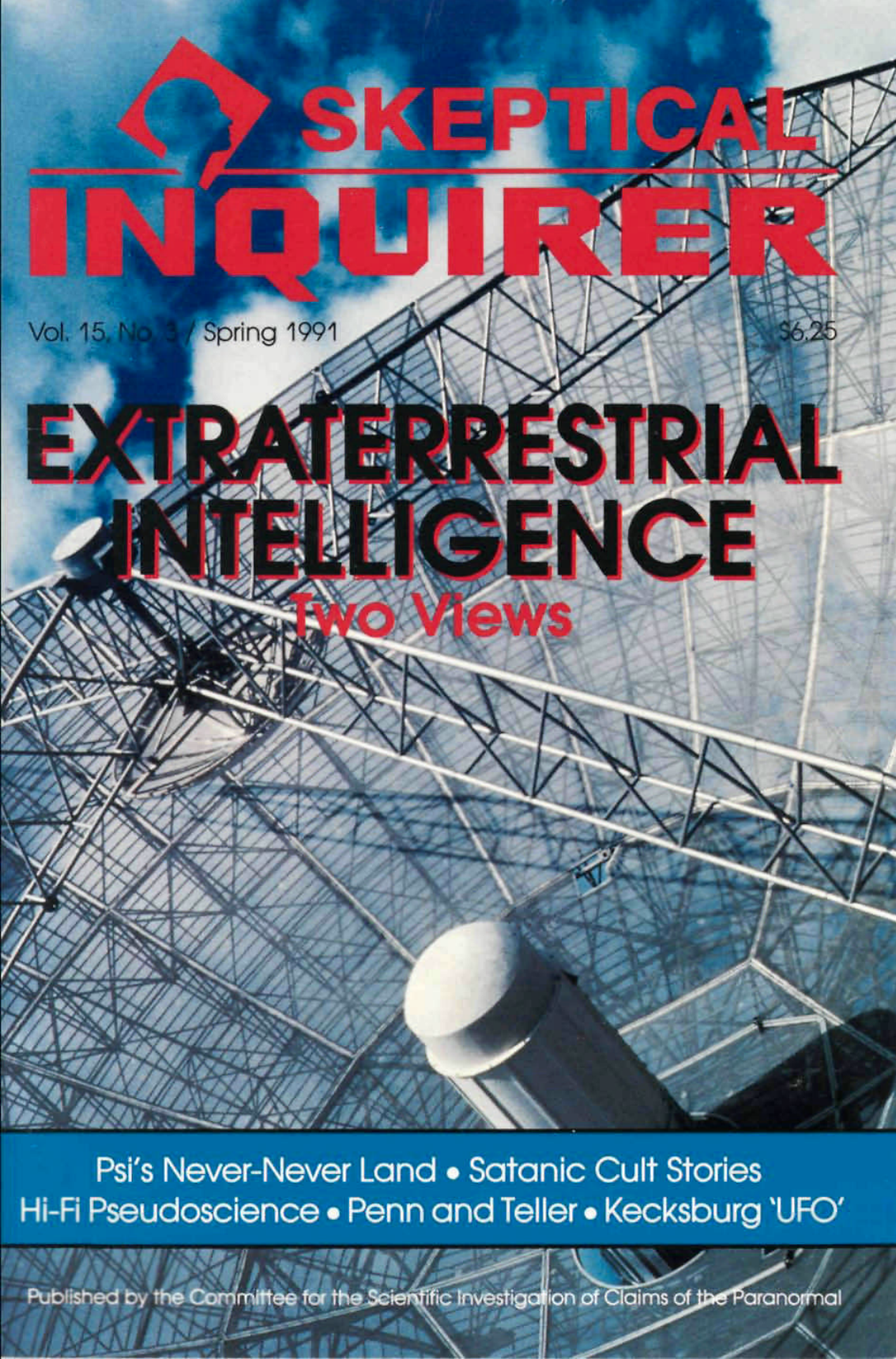

SKEPTICAL INQUIRER

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EXTRATERRESTRIAL INTELLIGENCE

Two Views

Psi's Never-Never Land • Satanic Cult Stories
Hi-Fi Pseudoscience • Penn and Teller • Kecksburg 'UFO'

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Journal of the Committee for the Scientific Investigation of Claims of the Paranormal

SPECIAL REPORT **250**

Hi-Fi Pseudoscience
Fred E. Davis

EXTRATERRESTRIAL INTELLIGENCE: TWO VIEWPOINTS

Searching for Extraterrestrial Intelligence
An Interview with Thomas R. McDonough **255**

Getting Smart About Getting Smarts
Zen Faulkes **263**

ARTICLES

Carrying the War into the Never-Never Land of Psi: Part I
Samual T. Gill **269**

Satanic Cult 'Survivor' Stories
Jeffrey S. Victor **274**

'Old-Solved Mysteries': The Kecksburg Incident
Robert R. Young **281**

Penn & Teller, the Magical Iconoclasts
Henry Gordon **286**

Magic, Medicine, and Metaphysics in Nigeria
Wolf Roder **290**

SCIENCE EDUCATION

What's Wrong with Science Education? Look at the Family
Raymond A. Eve **296**

NEWS AND COMMENT **227**

Recovery Trend / Browning Quake Prediction / Flatliners / Dowsing Detective / Unusual Lights / Starry Poppycock / Real Estate's Patron Saint / Omarr Disclaimer

NOTES OF A FRINGE-WATCHER **242**

Three Curious Research Projects
Martin Gardner

PSYCHIC VIBRATIONS **247**

BOOK REVIEW **302**

Rita L. Atkinson, Richard C. Atkinson, Edward E. Smith, and Daryl J. Bem, *Introduction to Psychology;* Neil R. Carlson, *Psychology: The Science of Behavior;* David G. Myers, *Psychology;* Carole Wade and Carol Tavris, *Psychology* (Robert H. Cormack)

SOME RECENT BOOKS **308**

ARTICLES OF NOTE **310**

FORUM **314**

Reporters and skeptics, 'paranormal' experiences, and a UFO-sighting in a Wordsworth sonnet

LETTERS TO THE EDITOR **322**

CSICOP NEWS **333**

ON THE COVER: Harvard University's 84-foot dish antenna, a SETI project sponsored by the Planetary Society. (Photo courtesy the Planetary Society.) Cover design by Valerie Ferenti-Cognetta.

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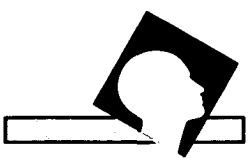

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News and Comment

After the New Age: The Recovery Trend

If you're not "in recovery" yourself, you surely know people who are. In recovery from what? Alcoholism, gambling, drug addiction, and sexual addiction are just a few of the possibilities. The person in recovery may have had one of these problems or may be "recovering" from being the spouse or child of someone who has the problem. In fact, recovery has been called the new spiritual movement of the nineties.

It's also a major growth industry: some 15 million Americans participate in half a million recovery groups, while 100 million are related to someone with some form of addictive behavior. For publishers and booksellers, addiction and recovery represent a bonanza, a trend important enough to warrant a special section in *Publishers Weekly* (November 23, 1990, from which the foregoing statistics are drawn).

The concept of recovery from addictive behavior owes its origins to the founding of Alcoholics Anonymous in 1935. AA's 12-step program has provided a successful formula for thousands of other organizations dedicated to recovery from one or another problem behavior. In the late 1960s, a related movement took hold with the formation of groups for adult children of alcoholics, or ACOAs. The mid-1980s extended the recovery movement to "codependents," a concept that includes just about everybody.

Like many nostrums of past eras, recovery sells by testimonial: The most successful books on recovery topics are those whose authors write from personal experience, talking about their own or their loved ones' recovery from an addiction or problem behavior. The subject matter ranges widely, since almost any behavior or

experience can serve as the basis of a 12-step program. One book publisher, says *Publishers Weekly*, even received a book proposal for "a 12-step approach to people who have witnessed UFOs." (The article doesn't mention whether the publisher accepted or rejected the proposal; watch the shelves of your local bookstore in coming months to find out.)

Many bookstores now have sections labeled "Recovery"; these are the same shelves that were formerly labeled "Psychology/Self-Help." Relabeling the section helps booksellers increase sales dramatically. In addition, there are now some 300 specialty bookstores around the country devoted entirely to selling books and gifts for people in recovery. According to *Publishers Weekly*, these gift items include AA anniversary medals and cards as well as T-shirts and posters. There is even a stuffed animal, Sponsor Bear, that recites encouraging slogans at the pull of a string.

Why has recovery become fashionable? One reason may be its link with the New Age movement. New Age publisher Ehud Sperling, quoted in *Publishers Weekly*, views recovery as "a subtrend of the New Age." He believes the youth of the sixties have transferred their search for an inner, spiritual experience from marijuana and LSD use to participation in 12-step programs. Another factor may be the recovery trend's focus on parents, children, and parenting (think of terms like "adult child," "inner child," and so on). Parent-child relations are a key concern of the baby-boom generation, who rebelled against their own parents and are now parents themselves.

At present, women seem to be the main group to have "bought into" the recovery movement. (Women purchase about 85 percent of recovery books.) Traditionally, they have been the primary buyers of diet books, and their focus on recovery may represent an extension of women's concern with "improving" themselves. The growth of the men's movement under the aegis of figures like Robert Bly may well lead to greater involvement by men in the recovery movement.

Even children ("Alatots") can become part of the recovery trend as parents who are "in recovery" seek to share their new understanding with their children. Recovery can become a way of life as the parents seek to ensure that their own addictive or codependent behavior isn't passed on to their children. Further, many programs require participants to view themselves as permanently in recovery, rather than as "cured." Will we see a new generation of psychological valetudinarians, much like the "delicate" women of the nineteenth century?

The vision of a population all permanently "in recovery" brings to mind W. S. Gilbert's description of a place where everyone holds a title of nobility: "When everyone is somebody, then no one's anybody." If we're all recovering, then what constitutes wellness?

It's not surprising, then, that as the recovery movement burgeons a backlash has already begun. The *Publishers Weekly* article notes that "skepticism regarding recovery goes hand-in-hand with its popularity." For example, in a recent book, *Lovebound*, author Phyllis Hobe makes the case that participants in 12-step programs may substitute one addiction for another, in effect becoming addicted to recovery.

—*Lys Ann Shore*

Lys Ann Shore is a SKEPTICAL INQUIRER *contributing editor.*

The Iben Browning Quake-Prediction Flap: Lessons Linger

The furor over Iben Browning's much ballyhooed prediction of an earthquake on the New Madrid fault on December 3, 1990, has long since died away, but some lessons linger.

The first lesson was taught by nature itself. The predicted earthquake didn't happen. This quickly calmed both public anxiety and the media frenzy, which had been reinforcing each other in a rising crescendo for weeks.

The affair also, one hopes, helped teach the lesson that the untested and unevaluated pronouncements of a scientific guru should not be given credence out of all proportion to their intrinsic worth. And in this case, the worth was precious little.

Browning, a 72-year-old New Mexico independent scientist, inventor, and business consultant, is an intelligent man with wide-ranging knowledge and interests. His fresh ideas and creative thinking frequently impress those who meet him. But that doesn't mean that he's usually right or that he has good judgment.

The essential point is that Browning's prediction and his tidal-force theory did not emerge through the usual processes of science, which include peer review and eventual scientific publication. His theory had not been subjected to such evaluations before being publicized by business associates and therefore had no scientific credence. This error-reducing, self-screening process of science is still much under-appreciated by media and public alike. Perhaps the Browning furor, following on the heels of the cold-fusion controversy, will help get the point across that sensational claims, advanced by solitary scientists, without peer review and without scientific publication, have little weight.

Although Browning's prediction had nothing to do with the paranormal, some of the processes by which it gained acceptance were similar. His associates claimed, and news media accepted, that Browning had accurately predicted the Loma Prieta earthquake of October 1989 in the San Francisco Bay Area. Yet when a transcript of Browning's relevant comments was subsequently examined, it showed he had said nothing about North America, let alone California or the Bay Area. Instead, he had merely forecast that an earthquake of about magnitude-6 would occur somewhere in the world on or about that date. This was hardly surprising; an earthquake of that magnitude occurs somewhere in the world on average about every three days. (See "Why Psychics Like to Predict Earthquakes," *SI*, Winter 1982-83, p. 11.) It was reminiscent of the way psychics, seers, and their supporters interpret unremarkable general statements retrospectively to make them sound like accurate, specific predictions.

Someday there will be a major earthquake on the New Madrid fault. It is good that the residents of the Midwest have been sensitized to the threat, something seismologists had been trying to achieve without much success. But modern geophysical science, for all its sophistication, does not yet have the tools to predict earthquakes with much precision in time, location, and magnitude, and that is a lesson in humility and realism that the media and the public should now better appreciate.

—*Kendrick Frazier*

Flatliners' Flat-Out Lies

The near-death experience (NDE), once a New Age publishing phenomenon, is now a Hollywood subsidiary. Consider three of 1990's biggest hits—*Flatliners*, *Ghost*, and *Jacob's Ladder*. All had NDE themes.

Ghost is relatively harmless special-effects fluff, except for its hackneyed thesis that even fraudulent channelers can, in a pinch, contact the dead. *Jacob's Ladder*, by the same screenplay writer, is the most imaginative, horrifying, and realistic of the lot, with an ending that doesn't rule out a skeptical interpretation. *Flatliners*, unfortunately, dons the mask of science to legitimate the movie's many lies.

Flatliners is about five Chicago medical students who systematically kill and resuscitate each other under more or less controlled circumstances in order to find out what lies just beyond death's door. At one point, the lone female participant asks the nonbeliever in the group why he has suddenly volunteered to go next. (He's actually in love with her and doesn't want her to put her own life on the flatline.)

Replies Kevin Bacon's character: "Because I'm the skeptic. I'm the control in this experiment. I should go next. Look, if there's nothing out there, then I am not going to convince myself that there is, and there's no reason for us to go any further."

Julia Roberts's character responds, in a somewhat petulant non sequitur, "Okay, but how do you explain the similarity in death experiences all over the world—people in all cultures and religions are seeing the same things in the same order?"

"I . . . I don't know. Maybe there's some chemical or hormone released from the brain at the time of death that makes it more palatable to us."

"No. *You're reaching.*"

This is all rather disheartening to anyone truly interested in understanding reports of NDEs rather than simply dismissing or religiously embracing them. First, Roberts's contention that the NDEers everywhere share the same sequence of experiences is dead wrong. Even believer Raymond Moody—the philosophy professor who introduced us to the subject in *Life After Life* before moving on to the credibility-enhancing *Elvis After Life* in 1987—would attest to that.

Not only do some NDEers *not* have one or several of the classic NDE experiences—such as the tunnel, being greeted by dead relatives, coming into the presence of a "being of light," and so on—not only do some shared NDE experiences *not* occur in the same order, not only do NDEers of different cultures meet religious figures of their own rather than of other cultures, but every single element of the classic NDE has been experienced in non-NDE circumstances.

The so-called out-of-body experience often occurs during the onset of sleep. The illusion of seeing one's body from above has been known to occur in pilots during lengthy solo flights. It is also common in dreams. The tunnel experience is more characteristic of exposure to ether, cannabis, mescaline, or LSD than it is of NDEs. Hallucinogens can also produce the bright light at the end of the tunnel, religious images, and the replaying of emotional childhood memories.

Experiments by L. J. Meduna in the 1950s showed that all these elements, as well as ineffability, seeming telepathic communications with a reli-

gious presence, and feelings of ecstasy and all-knowingness, can occur when the body is subjected to elevated levels of carbon dioxide. Not so coincidentally, cardiac arrest, which elicits a great many NDEs, causes elevated levels of carbon dioxide. As for the renewed appreciation of life that often follows an NDE, any brush with death may generate similar feelings.

The entire Bacon-Roberts exchange is a disingenuous condensation of the debate over the reality of NDEs. An NDE would feel just as real to a skeptic as to a believer if the experience results from both a flood of endorphins and other biological events, as it probably does. Yet the skeptic might be just as wrong as countless others whose hallucinations have seemed utterly real in their particular circumstances and even in retrospect. So Bacon would hardly be a control. Also, his offhand alternative explanation—that NDEs might *merely* be brain-induced fantasies shielding us from the horrific reality of dying (*Jacob's Ladder* is partly that, brilliantly depicted)—caricatures the skeptic as a dismisser of, rather than an investigator of, puzzling phenomena.

It's a shame that many viewers will assume that *Flatliners'* depiction of NDEs draws upon the scientific and quasi-scientific literature on the subject. Hardly. There is no documented case of an NDE following a flatline indication of brain-death. There is no recorded case of an NDEer coming back only to be tortured by guilt over some wrong he or she had done. Certainly no one except *Flatliners'* Don Juan character has ever experienced the afterlife as a beer commercial.

A remarkable inconsistency is the movie's undermining of its own assumption that the afterlife is real because these characters experience it as real. They experience hallucinations, days after their NDEs, that are just as convincingly real. But the kids, or the filmmakers, do not draw the obvious conclusion that their NDEs could also be hallucinations.

Though the movie's promo suggests that "certain lines shouldn't be crossed," any viewer can discern that the three young men and one young woman who cross over for some rather grueling afterlife therapy do return without brain damage and, ultimately, with psychological breakthroughs. That's not much of a warning against "crossing over." Consider the Toronto New Age bookstore owner who, according to her sister's testimony in the September issue of Toronto's New Age monthly, *Dimensions*, killed herself because cosmetic surgery had failed to completely eliminate her crows-feet! Apparently she expected an understanding deity to shuttle her off to her next temporarily wrinkle-free incarnation. The writer suggests that this apparently senseless tragedy has actually been a growth experience for herself and other New Age friends. If this life-trivializing mentality is prevalent, perhaps the opening of the first flatliners clinic isn't far off.

—*Jeff Walker*

For Further Reading

Alcock, James E., Psychology and near-death experiences, SKEPTICAL INQUIRER, Spring 1979, pp. 25-41.

———. Psychology of the out-of-body experience, SKEPTICAL INQUIRER, Fall 1983, pp. 74-75.

Blackmore, Susan J., Out of the body? In *Not Necessarily the New Age*, 165-184, ed. Robert Basil (Buffalo, N.Y.: Prometheus Books, 1988).

Moody, Raymond A., Jr., *The Light Beyond* (New York: Bantam, 1988). This book's Bibliography abstracts articles from *Anabiosis: The Journal of Near-Death Experience Research* that clearly state that research up to 1986 has failed to substan-

tiate NDEs as aborted transitions to an afterlife.
Sabom, Michael B., *Recollections of Death* (New York: Harper & Row, 1982), pp. 176-178. The author is a believer, but laudably does discuss the striking but seldom-mentioned hypercarbia experiments of the 1950s.

Jeff Walker is a freelance writer and an executive member of the Ontario Skeptics.

Such Claims 'Shall Not Pass Unchallenged'

When David J. Simmons of Ridgecrest, California, opened his Sunday paper and read a long, credulous story about a local dowser, he felt a familiar irritation. So he sat down and wrote a letter to the editor—but not until two weeks later. In the interim, Simmons did some investigative research of his own. Only when he had the results of his quest in hand did he confront the newspaper editor with evidence of the article's factual inaccuracies.

The claims made in the article were anything but trivial. Roselle Goza, a staff writer for the *Ridgecrest Daily Independent*, interviewed dowser Vern McGuire about his experience and abilities. After relating how he learned dowsing from his "granddad," McGuire went on to boast about his achievements. Most spectacularly, McGuire claimed he had helped to "break the case of the Hillside Strangler, who was terrorizing the women of Southern California." The tale proceeded in all-too-familiar fashion, with the dowser cast as the hero. Here is his story, as published in the *Independent*, with the crucial factual claims highlighted in boldface:

The authorities were unable to get a lead on [the Strangler]. McGuire and some friends decided to dowse for him. However, the police refused to listen to them.

After two more deaths they did.

"We got the Los Angeles police and sheriff's departments, the Marshal Service and the Federal Bureau of Investigation," McGuire said. "They told us that if we knew where the Hillside Strangler was, we must be involved with him.

"To prove we weren't involved, we had to find him in such a way that it was impossible we could be involved, so we moved in [*sic*] with some cops.

"Then he killed again.

"Because **he would now be on the run,** we thought this was the best time to look for him."

The dowsers went into action. **In the Federal Building on Spring Street in Los Angeles, they dowsed a map and located the killer.**

A law enforcement officer in a cruising helicopter was notified, and he relayed the news to a ground-based highway patrolman who was told to also check **a car without a light that was sitting in a gas station.**

After the highway patrolman asked the driver of the car to check his taillight, he ordered him to open the trunk. **Inside were articles of clothing and a purse belonging to one of his victims.**

"He knew they had him," McGuire said, "We were vindicated." McGuire grinned at the memory of his exoneration.

Simmons made copies of the article and sent them with a letter to each of the law-enforcement agencies named in the story. He asked them for information relative to the claims and told the agencies that their answers would be forwarded to the paper "as a factual followup to the story."

The agencies responded promptly.

First was Craig L. Meacham, the U.S. marshal for the Central District of California, whose offices are located in the U.S. Courthouse on Spring Street in Los Angeles:

"I note that the news article implies that the U.S. Marshals Service was actively involved in the Hillside Strangler Investigation," he wrote. "As to the USMS involvement in that case, I suggest that the writer or his/her source have the facts wrong. . . . In that the Hillside case was not a Federal case, nor were the suspects named fugitives at that time, I can assure you that the Marshals Service had no active role in that case."

Concerning McGuire's claim of map dowsing in the Federal Building, Meacham wrote, "There are no agencies housed in the building that would be involved with dispensing maps . . . but the building is open to the public, so Mr. McGuire could have entered with his own map. However, unless the purported dowsing took place behind closed doors, i.e., a public rest room, his conduct would immediately attract the attention of our security officers and action to preserve the sanctity of the court would immediately ensue."

Then came a letter from Fred C. Reagan, of the FBI's Los Angeles office, located on Wilshire Boulevard. Reagan wrote that "in the Hillside Strangler case, we provided support service on request of the primary investigative agency but we were not actively involved in the investigation. Nor are our offices in 'the Federal Building on Spring Street in Los Angeles.' " He added, "We do not use dowsing as an investigative technique."

The Los Angeles Police Department put the final nail in the coffin of McGuire's claims. Lieutenant R. B. Lewis, acting commanding officer of the Robbery-Homicide Division, stated flatly, "McGuire's statements concerning the 'Hillside Strangler' case and his involvement are in conflict with what occurred. One of the suspects was arrested in Bellingham, Washington, and the second was arrested at his place of business in the City of Glendale. No clothing belonging to any of the victims was ever found."

Armed with this evidence, Simmons was now ready to write his letter to the editor of the *Ridgecrest Daily Independent*. He noted politely that the article "was a tad gullible" about McGuire's claims. "Several verifiable claims were made concerning events that are in the public record and you neither checked those claims for

New Series of Essays

Starting in this issue you will notice a new addition to the SKEPTICAL INQUIRER. The Education Subcommittee of CSICOP has asked a number of scholars and educators who are interested in science education to write essays about matters that concern *SI* readers. Typically these articles will deal with popular perceptions of the paranormal and with pseudoscience, the understanding and interpretation of science, and issues that relate to the effective teaching of science. We hope that these articles will help *SI* address the problems of scientific illiteracy and the perception of science, and help to present a more positive picture of what science is, what it can do, and what its role is in modern society. The first essay, by Raymond A. Eve, begins on page 296.

accuracy nor, lacking that, printed a disclaimer to the effect that these were unverified claims," he admonished the editor. "Since you didn't see fit to check the facts before you printed the claims, I took the the liberty of doing it for you." He then explained his investigative procedures and summarized the results. Finally, he spelled out the limits of his investigation. "This letter is specifically intended to compare McGuire's version of the Hillside Strangler case with the facts as they are known to the law enforcement agency that actually solved the case," he wrote. "The efficacy of dowsing has not been at issue. It must be added that in none of the several controlled tests of dowsers that I know of has any dowser ever found any kind of water, running, still, pure, contaminated or otherwise, more often than it would have been found by someone who was just guessing."

A happy end to this story would be that the newspaper acted on Simmons's information, either publishing it directly or doing their own follow-up article. Yet, although the newspaper did publish an earlier, "quickie" letter from Simmons questioning the claim, written before his investigation, he says he has received neither an acknowledgment nor an answer to his letter outlining his detailed findings. No follow-up article was published. In fact, the same paper published a "gee whiz" type story about the full-moon effect about a month after the dowsing one. His letter about that was published.

Simmons told the SKEPTICAL INQUIRER: "This sort of thing is a personal affront to me because Ridgecrest is right next door to the Naval Weapons Center, China Lake, and has a relatively high percentage of scientists and engineers in its population. That our local editor should be so naive is an embarrassment indeed.

"My motto," he said, "is 'Their BS shall not pass unchallenged.' " And in challenging the claims, Simmons has provided an investigative model for others to follow when faced with the seemingly limitless credulity of their local media.

—Lys Ann Shore

Unusual Lights: Giving the Public Answers

It was a quiet November night at WJLA-TV, the ABC affiliate in Washington, D.C. Quiet, that is, until the telephones started ringing.

I took the first call, from Northern Virginia. A woman described seeing strange lights moving in a pattern in the sky.

At first I thought they might be helicopters on maneuvers. Living so close to three public airports, two Air Force bases, a Navy yard, the Pentagon, and many other military installations, it seemed a sensible guess. After all, it was Veterans Day (Sunday, November 11, 1990).

Soon other calls came in, some from as far as 15 miles away from the area of the first reported sightings. The story was the same: five to seven lights, all moving in a pattern, sometimes coming together into one spot. Since this seemed to eliminate my helicopter hypothesis, I began to question callers, while everyone in the newsroom struggled to cope with the growing volume of calls.

What color were the lights? White. Do they move in a coordinated pattern, or independently? In a definite

pattern. Is there any noise? No, silence.

Meanwhile, the assignment desk dispatched a crew in a live-truck to the area, hoping to catch the strange display on camera.

After taking a few more calls, I remembered that the Redskins would be playing in the Monday night football game the following evening. Forgetting that the game was in Philadelphia, I guessed that maybe the lights were from the Goodyear blimp. I know the blimp has a large display panel that could certainly show any pattern desired. It would also explain the disparate locations of the calls coming in.

When the phones stopped ringing momentarily, I called the Dulles International Airport's Air Traffic Control tower. I asked the person in charge if there was any unusual aerial activity in Northern Virginia. He said no, but there was a light show at the grand-opening celebration of a mall in that area. I asked if the spotlights might be reflecting off a low cloud cover, and he said yes. Here was our answer. But the distance between the callers' locations still seemed strange.

A call to a local police department revealed that they too had been inundated with calls. The light show, they explained to me, was actually being sponsored by several McDonald's restaurants in the Northern Virginia area. Searchlight trucks were scattered throughout the region, and their beams were reflecting off the low cloud cover.

This is what we reported on the 11-o'clock news during the weather segment. Having led the effort to find a rational explanation for these events, I wrote the story. This was, by far, the item that sparked the most interest in the viewing audience, and it was one more demonstration of the general public's fascination with these phenomena.

Members of the news media have a special responsibility to be open-minded skeptics. People turn to the media not only to report unusual events, but to get answers. We have a duty to explore strange phenomena, rather than dismiss them out of hand, and to present clear, logical explanations. The public is looking for reassurance, and we must provide it whenever possible, instead of fostering a belief in the mysterious.

—*James Terpening*

James Terpening was an intern at WJLA-TV, Channel 7, Washington, D.C., and is now a freelance writer.

Starry Poppycock and a Third Choice

When the *Pasadena* (Calif.) *Star-News* asked readers to help them select a horoscope column, Thomas R. McDonough saw stars. McDonough, an astrophysicist and coordinator of the SETI program of the Pasadena-based Planetary Society, sent the following letter to the *Star-News*, which published it under the heading "Starry Poppycock":

> The *Star-News* asks us to vote on which horoscope column we prefer. It is unfortunate that a third choice was not included: *None of the above.* Careful scientific studies, some done with the cooperation of leading astrologers, have shown that horoscopes can predict the future no better than a throw of the dice.
>
> You provided us with a splendid controlled test by reprinting on the same page two horoscopes cast for the same date by the competing astrologers. If there were anything to astrology, each would have predicted approximately the same events. Instead, most were completely different. Some excerpts:
>
> Sagittarius: "You might be unduly stingy" vs. "Save some energy for that big date." Aquarius: "Your negative thoughts dominate your positive ones" vs. "Take a special love on a whirlwind tour." Gemini: "Don't bet dollars just to win dimes" vs. "You could take a fall—romantically."
>
> Pasadena, the home of the brilliant Southern California Skeptics, deserves better. Let the space currently wasted on astrological drivel be taken by reprinting articles from the wonderful magazine of the parent organization, the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), exposing hoaxes such as these.
>
> Incidentally, one of my horoscopes for today (I'm a Libran) said, "Yesterday, you may have been forceful and bold, today you are apt to be more reticent and retiring." Well, yesterday, I was reticent and retiring; today, reading this item in the *Star-News* made me forceful and bold. That's why I wrote this letter. ■

Strieber Slapped by UFO Fiction Writer

While notorious pro-alien-abduction writer Whitley Strieber is not known for verifying his sources, his novel *Majestic*, about a massive governmental UFO coverup, recently suffered another strike against its credibility: an incident presented by Strieber as genuine turned out to be a complete fiction created by British writer David Langford.

According to the August 1990 issue of *Locus*, Langford was "surprised" to find a condensation of his book *An Account of a Meeting with Denizens of Another World, 1871* on pages 46 and 47 of *Majestic*. The original was a tongue-in-cheek account of a fictional Victorian UFO incident, in the form of a "rediscovered narrative" attributed to a principal character.

The article asserts that Strieber was "completely taken in after reading a write-up on Langford's book and wrote it into *Majestic* as a genuine historical incident (although Langford's dates were altered to fit Strieber's plot). No permission was asked or fee paid for use of the work."

Future editions of *Majestic* will

carry an appropriate credit, and Strieber has apologized for the mistake. The story line of *Majestic* follows the UFO coverup alleged by the "MJ-12 papers," since found to be fraudulent. (See *SI*, Winter 1987, Spring 1988, Summer 1988, and Spring 1989.)

—*Paul T. Riddell*

Paul T. Riddell is a columnist for New Blood *magazine.*

Patron Saint of Real-Estate Deals

Have a house you'd like to sell in today's slow real-estate market? If you've already painted the walls, spruced up the lawn, and even offered to throw in your spare Rolls Royce as an inducement to a buyer, all in vain, there is still another trick you can try. According to recent reports in the *Washington Post*, the latest hot tip for selling a house is to bury a statuette of St. Joseph in the front yard. Be sure the saint's head is pointing toward the street, and don't dig up the figurine until after you've closed the deal.

According to the *Post*'s "Home Front" column (November 15, 1990), religious supply stores in the Washington area "say they have been deluged by agents and owners buying statues by the dozen." One local real-estate agent admits to keeping a box of the figurines under her desk. (The National Association of Realtors failed to return a telephone call inquiring about its opinion concerning the efficacy of the statue ploy.)

Why has St. Joseph been pressed into service by desperate home owners and real-estate agents? Most probably because the biblical Joseph, foster-father of Jesus and husband of the Virgin Mary, was a carpenter and hence, by extension, a home-builder. In the Catholic church, he's the patron saint of carpenters and other manual workers. In the mystery plays of the Middle Ages, however, Joseph was the butt of comedy, and given the current fad, it appears that his comic career has been resurrected.

—*Lys Ann Shore*

College Students Should *Know*

The campaign to get daily newspapers to run disclaimers with their astrology columns shouldn't forget that college newspapers sometimes publish horoscopes too. A reader's call to the editor of *Ka Leo O Hawaii*, the student newspaper of the University of Hawaii at Manoa, Honolulu, resulted in the paper adding this refreshingly phrased—and boldfaced—disclaimer at the end of its Sydney Omarr horoscope:

> **College students should know that *horoscopes are solely for entertainment* purposes and should not be taken seriously.**

—*K.F.*

THE U.F.O. SCHOOL OF PHOTOGRAPHY

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Friday, Saturday, and Sunday
May 3, 4, 5, 1991

Keynote Address

"In Search of Our Origins"

Donald C. Johanson
President, Institute of Human Origins, Berkeley
Discoverer of "Lucy"

Friday, May 3

7:30 - 9:00 A.M.: Registration

9:00 - 9:15 A.M.: Opening Remarks — **Paul Kurtz,** CSICOP Chairman

9:15 A.M. - 12 NOON: CONTROVERSIES IN HYPNOSIS

Moderator: **Robert A. Baker,** professor emeritus of psychology, University of Kentucky, Lexington
Nicholas Spanos, professor of psychology, Carleton University, Ottawa
Ernest Hilgard, professor emeritus of psychology, Stanford University
Kreskin

12 NOON - 2:00 P.M.: Lunch Break

2:00 - 5:00 P.M.: Two Concurrent Sessions

(1) SUBLIMINAL PSEUDOSCIENCE

Moderator: **Ray Hyman,** professor of psychology, University of Oregon, Eugene
Eric Eich, associate professor of psychology, University of British Columbia, Vancouver
Anthony Pratkanis, assistant professor of psychology, University of California, Santa Cruz
Timothy Moore, professor of psychology, Glendon College, York University, Toronto

(Continued on next page.)

Friday (continued)

(2) POPULAR PSYCHOLOGY: AN EVALUATION

Moderator: **Barry Beyerstein,** professor of psychology, Simon Fraser University, Vancouver, B.C.

Loren Pankratz, professor of psychology, Oregon Health Sciences University, Portland

Gerald Rosen, professor of psychology and psychiatry, University of Washington, Seattle

Carol Tavris, author, lecturer, Department of Psychology, UCLA

5:00 - 8:00 P.M.: Dinner Break

8:00 P.M.: KEYNOTE ADDRESS

(Wheeler Auditorium, University of California, Berkeley)

"In Search of Our Origins"

Donald C. Johanson, President, Institute of Human Origins, Berkeley, California

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Saturday, May 4

9:00 A.M. - 12 NOON: CATASTROPHISM AND EVOLUTION

Moderator: **Eugenie Scott,** physical anthropologist, executive director, National Center for Science Education

Walter Alvarez, professor of geology, University of California, Berkeley

Richard Muller, professor of physics, University of California, Berkeley

Jere Lipps, professor of integrated biology, University of California, Berkeley

12 NOON - 2:00 P.M.: CSICOP Fund-Raising Luncheon (optional)

James Randi, Philip Klass, and **Ken Frazier**

"It Must Be Psychic: The Psychology of the Paranormal." Susan Blackmore, psychologist, University of Bristol, U.K.

2:00 - 5:00 P.M.: Two Concurrent Sessions

(1) URBAN LEGENDS

Moderator: **Robert Hicks,** analyst, Department of Criminal Justice Services, Commonwealth of Virginia

Jan Brunvand, professor of English, University of Utah

Alan Dundes, professor of anthropology, University of California, Berkeley

William Ellis, associate professor of English and American Studies, Pennsylvania State University, Hazleton

(2) TEACHING CRITICAL THINKING WITH THE SKEPTICAL INQUIRER

Moderator: **Lee Nisbet,** professor of philosophy, Medaille College

Steven Hoffmaster, professor of physics, Gonzaga University

Richard Malvin, professor of physiology, University of Michigan School of Medicine

Brant Abrahamson, social studies educator, Riverside Brookfield High School, Brookfield, Ill.

(Continued on next page.)

Saturday (continued)

6:00 - 7:00 P.M.: Pre-Banquet Social Hour (cash bar)

7:00 - 10:00 P.M.: AWARDS BANQUET (optional)

Awards Presentation: **Paul Kurtz,** CSICOP Chairman
Donald C. Johanson, Eugenie Scott, and **Susan Blackmore**
Entertainment: **Paul Krassner,** editor of *The Realist*

Sunday, May 5

9:00 A.M. - 12 NOON: Conversation Session. Current Issues / Recent Developments, led by **Joe Nickell**

2:00 P.M. - 4:00 P.M.: Groups Meeting, led by **Barry Karr**

REGISTRATION FORM

Preregistration is advised. (U.C. Berkeley students and faculty, no charge. Other students, 25 and under, with I.D., $25.00. Registration fee does not include meals or accommodations.) Mail to:

1991 CSICOP Conference, P.O. Box 229, Buffalo, New York 14215

☐ **YES, I (we) plan to attend the 1991 CSICOP Conference.**

☐ $125 registration for _____ person(s), includes Keynote Address. $ _____

☐ $22.50 Saturday Luncheon for _____ person(s) $ _____

☐ $39 Saturday Awards Banquet for _____ person(s) $ _____

☐ $10 Keynote Address (this fee is for nonregistrants only) for _____ person(s) $ _____

☐ Will require bus transportation to Keynote Address. **Total $** _____

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☐ No, I will not be able to attend the conference, but please accept my contribution (tax-deductible) of $ _____ to help cover the costs of this and future CSICOP special events.

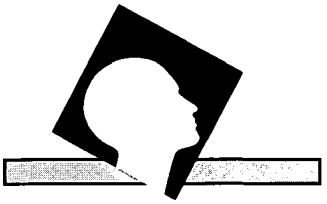
Note: The CSICOP Hospitality Room on the lobby floor of the hotel will be opened at 5:00 P.M. on Thursday, May 2 (cash bar 7:30 to 11:00 P.M.). This room will be available to registrants for the duration of the conference.

Transportation: Airlines servicing Oakland International Airport are recommended. Conference travel discounts are available from American and United airlines by calling Sue Szarletta at Hyatt Travel Service: 800-777-HYATT (or FAX at 716-633-2208). Special Budget Rent a Car discounts are available from Hyatt for those traveling on American Airlines. Claremont Limousine Service ($15.00 per person) leaves hotel on the half-hour and the Oakland Airport on the hour. Reservations are required: 415-873-7771. Metro Cab charges $24.00 (415-444-4199).

Accommodations: Claremont Resort Hotel, Ashby & Domingo Avenues, Oakland. Telephone 415-843-3000. Single $99, double $99. (The hotel will arrange shared doubles upon request.) Cut-off date for reservations at these special rates is April 2. These special rates are available from May 2 through May 7. Check-in time, 3:00 P.M.; check-out time, 12:00 Noon.

For more information, call or write to Mary Rose Hays at the CSICOP, Box 229, Buffalo, New York 14215 / Telephone: 716-834-3222.

Notes of a Fringe-Watcher



MARTIN GARDNER

Three Curious Research Projects

Urantia author disclosed, a second Titanic novel, permanent paranormal objects, and some questions

Instead of devoting this column to a single topic, as in the past, I will cover three unrelated topics on which I invite the help of anyone who may have information bearing on any of them. (I can be reached at 110 Glenbrook Drive, Hendersonville, NC 28739.)

First, some unusual new evidence has come to light about the origin of *The Urantia Book* (*UB*), the subject of my Winter 1990 column. The *UB* is an enormous tome that purports to have been dictated by a group of extraterrestrial intelligences. It is the Bible of a growing religious cult called the Urantia Foundation. The most interesting aspect of the *UB*, I wrote, is the mystery of who channeled it. Leaders of the group have resolutely refused to divulge the channeler's identity. All they will admit is that the channeler was a friend of a prominent Chicago psychiatrist and former Seventh-Day Adventist, Dr. William Sadler. The channeled material was given to Sadler, who edited it into what became the *UB*. Sadler is on record as saying that the identity of the channeler would forever remain unknown. Of all printed works said to be dictated by superpowers, the *UB* is the largest and the most detailed in its bizarre revelations and prophecies.

I am pleased to report that after many months of detective work I have learned the identity of the channeler. This was first disclosed to me by Iola Martin, an Adventist now living in Washington. It has since been confirmed by Mrs. Harold Sherman, of Arkansas. She and her husband had at one time been part of the Foundation's inner circle in Chicago.

The story begins with Dr. John Harvey Kellogg, a prominent Adventist who started the Kellogg cornflake company in Battle Creek, Michigan, and wrote many books on health and diet. Kellogg eventually clashed with Ellen G. White, the Adventist prophetess whose visions and revelations from God became the basis of Adventist doctrines. In 1907 Kellogg was excommunicated by the church.

Sadler, too, was in his early years a devout Adventist. He began his career working for Kellogg, but later broke with the church to become a well-known Chicago psychiatrist and a prolific author. In his most popular book, *The Mind at Mischief*, he spoke

of having known only two persons who channeled revelations in ways that he could not attribute to any sort of mental disorder. He does not name them, but clearly one was White and the other was the man who channeled the *UB*.

Kellogg and his wife had no children of their own, but they raised some 40 youngsters. Only a few were legally adopted. Among those not legally adopted were Wilfred C. and Anna B. Kellogg. Both were brought up as Adventists. Unrelated to one another, they fell in love, married, and moved to Chicago, where they became close friends of the Sadlers. Indeed, Wilfred was business manager of Sadler's Chicago Institute of Research and Development, at 533 Diversey Parkway, Chicago. The building has long been the headquarters of the Urantia Foundation. Wilfred and Anna had one child, their daughter Ruth. She was totally deaf, although I am told she did learn to speak. Later, Ruth and her baby died during childbirth somewhere on the West Coast.

The *Urantia Book*'s channeler was Wilfred Kellogg. He was a founding trustee of the Urantia Foundation, a position held from January 1950 until his death on August 31, 1956. Anna died February 24, 1960. I would be grateful if someone in Chicago would check Chicago papers for Wilfred's and Anna's obituaries. (Chicago papers do not respond to requests for such information.) Mrs. Sherman tells me that Wilfred was a modest, quiet man, and the last person one would suspect of being capable of producing the *UB*, or, as believers would prefer to say, of having been chosen by the superpowers to be their conduit.

The identity of the channeler explains why the *UB* contains so much material that mirrors Adventist dogmas, such as the doctrine of soul-sleeping until the body's pattern is reconstituted on other planets, and the ultimate annihilation of the wicked rather than their eternal torment in a mythical hell. Of course there are major differences in the two religions, especially in the *UB*'s acceptance of an old Urantia (the book's name for Earth) and the evolution of all life upon it. There are many amusing details that mesh with Adventist beliefs. Jesus and the archangel Michael, for example, are considered identical.

One of the strangest echoes of Adventism in the *UB* is a personage named Amadon. You can read all about him in the *UB*'s Paper 67. The great Lucifer rebellion of the Christian Bible is there described as taking place on Urantia some 150,000 years before Adam and Eve. For 300,000 years Urantia had been ruled by the evil Caligastia (the name suggests Caligula), a servant of Lucifer. When Caligastia decided to make himself absolute dictator, he was opposed by Van the Steadfast, chairman of the Supreme Council of Co-ordination.

Throughout Caligastia's seven-year rebellion, Van was supported by his loyal assistant Amadon, the human hero of the rebellion. He was not as intelligent as the superhuman Van, but he was unwavering in his devotion to God the Father and the Son Michael (Jesus). The rebellion ended in Caligastia's expulsion. The Amadonites were a "noble band" that supported Amadon; their descendants, along with the rival Nodites, flourished until the establishment of Eden. Sustained by the Tree of Life, Amadon continued to serve Van for more than 150,000 years, until the arrival of Adam and Eve.

Now for the curious coincidence. George Washington Amadon (1832-1913) was a prominent Adventist editor and publishing executive, no

doubt descended from the noble Amadonites. It was he who interviewed John Harvey Kellogg about his heretical opinions just a few months before the doctor was kicked out of the church in 1907. This lengthy interview was first published in the April and June 1990 issues of *Spectrum*, an unofficial Adventist journal. It is a fascinating interrogation because it reveals that the church was then fully aware of Ellen G. White's continual plagiarisms, but was not disclosing this to church members. These plagiarisms and the church's suppression of the truth about them was one of the main reasons for J. H. Kellogg's disenchantment with White.

I would welcome hearing from anyone who can supply information about Wilfred Kellogg. When and where was he born? Did he attend college and, if so, where? How heavily were his revelations edited by Sadler? It will be interesting to see if Urantia leaders (the group recently split into two rival organizations) will now admit that the *UB* came from the mind of an ex-Adventist.

* * *

In 1986 Prometheus Books published my book *The Wreck of the Titanic Foretold?* The theme is that, contrary to what many believers in precognition have argued (notably Ian Stevenson, a parapsychologist best known for his research on reincarnation), there is no good reason to believe that the *Titanic*'s disaster had been paranormally anticipated. My book focused on Morgan Robertson's prophetic novel *Futility* (later retitled *The Wreck of the Titan*), first published in 1898, 14 years before the *Titanic* sank.

Robertson's sea tales were enormously popular in his day. Even after his death in 1915 there were large advertisements for his books in popular magazines—for instance, the entire back cover of *Scientific American*, April 8, 1916. Today Robertson is remembered mainly for the striking parallels between the sinking of the *Titanic* in April 1912 and the fate of his 1898 book's imaginary liner, the *Titan*, which also sank in April after striking an iceberg in the North Atlantic.

"She was the largest craft afloat and the greatest of the works of man," was how Robertson described the *Titan* in his novel's opening sentence. The structural resemblance of the *Titan* to the *Titanic* is remarkable, but no correspondence has been more impressive to occult writers than the name of Robertson's fictional ship.

New evidence has come to light suggesting that this similarity of names may not be so titanic after all. Everett Bleiler, in his marvelous reference work *Science Fiction: The Early Years* (Kent State University Press, 1990) reports his discovery of an obscure novel by William Young Winthrop. Nothing is known about Winthrop except that he was born in 1852 and lived in Woodmont, Connecticut. Titled *A 20th Century Cinderella or $20,000 Reward*, Winthrop's novel was published in 1902 by the Abbey Press, a New York vanity house. Bleiler summarizes the plot, calling the book "a very long amateurish novel" and a "silly bore." I mention the novel here only because it refers to a gigantic ocean liner called the *Titanic* that had been built by England's White Star company sometime before 1920, the year in which Winthrop's science-fiction story takes place.

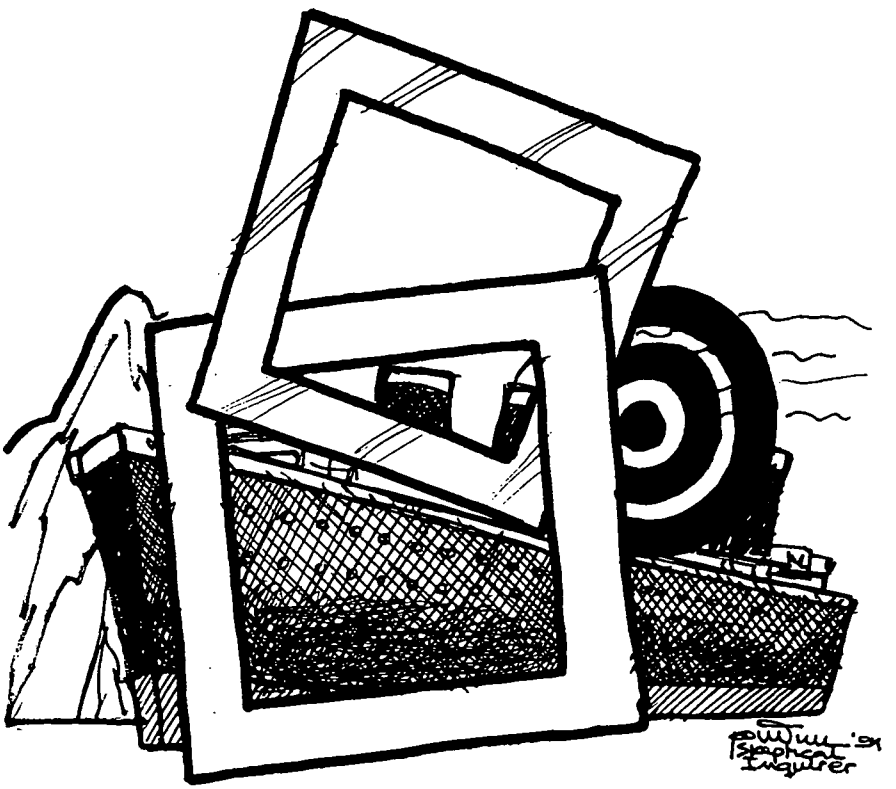
Now the actual *Titanic* was also a White Star liner, although not built until a decade after Winthrop's novel was published! This could be another coincidence (believers in precognition will no doubt consider it another paranormal prophecy even though the

fictional *Titanic* does not sink), but does it not suggest the following? It seems to me entirely possible that the White Star company, as early as 1898, when Robertson wrote his novel, had announced plans to construct the world's largest ocean liner and to call it the *Titanic*.

Perhaps someone in England with access to newspapers and periodicals of the late 1890s, or access to old White Star records, can find evidence to support this conjecture. Winthrop may, of course, have read Robertson's earlier novel and slightly modified the name of its ship, but Robertson had not named the steamship company that built his *Titan*. Was it to avoid giving White Star unearned bad publicity?

* * *

The January 1990 issue of England's *Journal of the Society for Psychical Research* carries an article titled "A Permanent Paranormal Object?" translated from a German journal of parapsychology. Written by Bernard Wälti, it describes two tiny frames, one made of paper, the other of aluminum foil, that are said to have been paranormally linked by a Swiss psychic, Silvio Meyer. Each frame is square shaped and about one inch on each side. Meyer claims that he cut the paper frame from notepaper and the aluminum frame from some metal foil that had been wrapped around a sandwich. First he sliced the paper frame, slid the foil frame through the slot, then held the cut between his thumb and finger for ten minutes. The cut miraculously welded, leaving no trace.



According to the article's author, the links were examined at the Swiss Federated Laboratories for Materials Testing and Research, at St. Gallen, by technicians (not named) who were unable to determine how this PPO could have been produced normally without using machinery to which Meyer is said to have no access. PPO is John Beloff's acronym for a Permanent Paranormal Object. Beloff edits the *Journal of the SPR*, and is England's best-known parapsychologist. He has long been searching for a genuine PPO, which he likens to the Holy Grail. We are told that the linkage still exists and can be examined by any scientist.

Does anyone have a theory about how Meyer could have linked the two little frames without making use, or having a friend who made use, of machinery for making paper or tinfoil? Can any reader in Switzerland check on what the laboratory at St. Gallen made of the linkage? Was it actually examined by scientists, or by some subordinate in the laboratory?

Beloff is certainly right in contending that if a PPO can be found that no one is able to duplicate by normal methods, it would constitute the best evidence yet for psychokinesis. For a short time bent spoons and Polaroid thought photographs were considered PPOs by many parapsychologists. Who now can take such artifacts seriously, aside from such gullible souls as Rhode Island's Senator Claiborne Pell? ■

THE VOICE OF INQUIRY: A Radio Magazine

Because CSICOP has received an increasing amount of mail expressing distress at the lack of skeptical perspectives in radio and television programs, we have begun to participate in a new venture called "Inquiry Media Productions." Inquiry Media Productions is a facility designed to develop and produce radio, television, and videotape programming that promotes skepticism, critical thinking, and the scientific method.

There are now seven installments of "The Voice of Inquiry," the radio-magazine series co-sponsored by CSICOP. Purchase your own Voice of Inquiry tapes and listen at your convenience. All programs are a half-hour long.

Program highlights include: **$6.95 each 3 for $18.00 All 7 for $41.00**

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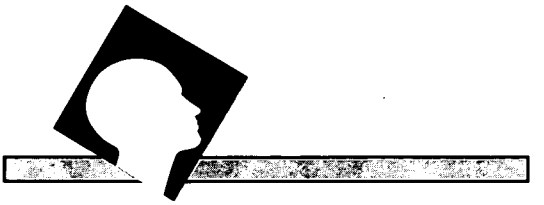
Psychic Vibrations



ROBERT SHEAFFER

Who says that there's nothing new under the sun? If you've tried colonic irrigation, neurolinguistics, meditation, Rolfing, and all the rest, without finding whatever it is you seek, you can now avail yourself of something called Holotropic Breathwork. Billed as "a natural, deep, non-ordinary state of consciousness" that uses "controlled breathing and evocative music to expand consciousness" and "conduct inner exploration," it is undoubtedly something far more profound than what us ordinary folk do when we unwind by breathing deeply and listening to relaxing music. Northern California readers of the *Well-Being Journal* are invited to enroll in weekend Holotropic "intensives" in the Santa Cruz mountains, presumably pursuing inner peace by sitting atop fault lines and meditating on something other than the movement of tectonic plates.

For those whose tastes incline toward a more potent New Age stew, that same journal offers Reiki (rhymes with "flaky"), an "ancient healing technique which accesses a highly sourced, limitless energy." So potent is Reiki that "relief from physical pain and emotional stress, total relaxation, inner peace, and release of spiritual blockages are reported results from even one Reiki treatment," leading one to suspect that repeated applications of this "limitless energy" just might be enough to raise the dead.

But these disciplines, while impressive, surely cannot compare in imaginativeness to "tooth-centered character analysis," said to have been among the last discoveries of the late guru Bhagwan Shree Rajneesh, who died in January of last year. As reported in the *Milwaukee Journal* of September 9, 1990, Swami Devageet, who had been the Bhagwan's personal dentist, revealed that Rajneesh discovered just months before his death that "man's animal past, including his aggressive instincts, are mysteriously stored in the human dental structure." Swami Devageet suggests that even Saddam Hussein could become "a blissful human being instead of a blistering warmonger" with "tooth-centered character analysis."

While we're on the subject of gurus, Maharishi Mahesh Yogi, the former guru to the Beatles and founder of Transcendental Meditation, is back in the news. The November issue of *Life* magazine reports that he plans to open a 480-acre Maharishi theme park in 1993 next to Disney World in Orlando, to be called "Vedaland." The Official Airline of Disney World is no doubt keeping its fingers crossed that no errant TM-ers will levitate into its already crowded airspace. The Maharishi is also peddling an assortment of products, including Himalayan mineral water, music cassettes, herbal teas, and cleansing bars, that can be obtained by calling the guru's toll-free order line, 1-800-ALL-VEDA.

* * *

It was Halloween, and the devil was up to his usual tricks. Ed and Lorraine Warren, the Amityville ghost-hucksters, were preparing to testify in support of a Connecticut woman who insists she should be refunded a $2,000 security deposit she lost for breaking her lease when she found her rental house was "haunted." (A magistrate awarded the woman $40 instead of the $2,000 she was seeking.) The Warrens appeared on the Joan Rivers television talk-show on Halloween morning, warning viewers to beware of satanic cults and crimes. They also said that a TV film crew they worked with had recorded proof of satanic manifestations in a haunted house. Unfortunately, the tape had been "erased."

In San Francisco, a confrontation between Satan-bashing Christian fundamentalists and pagan practitioners of Wicca resulted in much fury, but fortunately no casualties. Texas evangelist Larry Lea, who distributes "prayer army dog tags" and sometimes preaches in combat fatigues, defiantly selected Halloween to launch his three-day exorcism of that city's supposed "evil immorality," even though demons are "strongest" at that time, says he. Opposing Lea were crowds of practicing pagans and spell-casting witches, as well as gay activists.

And video-rental firms nationwide report there has been furious demand for the movie *Three Men and a Baby* since reports began circulating that a ghost could be seen haunting one of the scenes in the film. As the characters played by Ted Danson and Celeste Holm walk past a window, there seems to be the figure of a young boy hiding behind a curtain. Some viewers think this is the ghost of a child who died in the house where the film was made. But a spokesman for the production com-

pany explains that the scene was shot on a sound stage, not in anyone's home, and that the "ghost" is actually a cardboard cutout figure used as a prop in the film. Nonetheless, many viewers still insist that something spectral is going on here, so video rental firms are content to sit back and enjoy the bonanza.

* * *

The para-world is now one monster richer than it was a short time ago. An Associated Press story of September 30 reported that Lake Erie can now boast a Lake Monster of its very own. A rash of recent sightings has led a local newspaper to give it the name "Besse," so Besse now joins Nessie, Tessie, Chessie, and its other cousins worldwide of the species *monstrus occultus*, "huge monsters that hide from zoologists." For some reason, Besse was not spotted until 1985, when cryptozoology had already shifted into high gear. The creature apparently had been biding its time since the Ice Age, until it could count on being received with due respect. Residents along the shores of Lake Erie should be especially pleased, since it was reported in the *London Times* that the Loch Ness monster brings $42 million in annual tourist revenues to Scotland. ■

SPECIAL REPORT

Hi-Fi Audio Pseudoscience

FRED E. DAVIS

Magic and mysticism are alive and well in the world of high-fidelity audio. Although one doesn't ordinarily associate audio with pseudoscience, a surprising number of products are being offered with no scientific basis whatsoever to support their claims. The complex functions within a CD player are beyond the grasp of the majority of the public, who are consequently susceptible (and gullible) to unsupported claims.

One fascinating aspect of all these products, despite their diversity, is that they all claim to do essentially the same thing! Perhaps this gives some insight into those areas of psychoacoustics most vulnerable to the power of suggestion.

Here are some of the claims being made, and some brief evaluative comments about them. This is not an exhaustive list, by any means. These were found merely by skimming through three or four audio magazines. It seems P. T. Barnum was no fool.

The 'green-marker myth' is just one of many unsupported claims being made about audio equipment. These product claims have more in common with magic and mysticism than with microelectronics.

1. **ElectroTec EP-C** ($500, Coherence Industries). This is a digital alarm clock, *identical* to the Micronta clock sold by Radio Shack for $24.95 (63-766). Coherence Industries and an editor of *Stereophile* claim it will improve the sound of your audio system by plugging it into the wall (not to the stereo system). It is supposed to "improve the conductivity of your household electrical system" and "have a 'smoothing effect' on the motion of electrons." They don't mention if it is necessary to set the correct time to gain this improvement.[1,2]

2. **Finyl** ($29.95, Digital Systems and Solutions, La Mesa, Calif.);[3] **Digi-Clear** ($20, Liquid Audio Products, St. Louis, Mo.);[4] **303 Protectant** (8 oz./$6.98, 303 Products, Redding, Calif.);[5] **Digital Touch** (2 oz./ approx. $15, AudioQuest, San Clemente, Calif.);[6] **Pro Sona** (4 oz./ $14.95, Van Nuys, Calif.)[7] A spray-on/buff treatment for CDs. Finyl claims it "improves dynamics and transient response, improves bass articulation, improves low-level detail, improves image specificity and depth, improves timbral accuracy, decreases harshness and noise." Unless these products fill in scratches to make CDs that skip more functional, there is no other possible benefit; they can neither affect the analog circuitry nor alter the sound of a CD. Claims have been made concerning the reduction of jitter in the data stream from the disc, but this has not been proved to be audible. Other reported treatments include Armor-All and Rain-X, although there was some evidence of Armor-All causing damage.

3. **CD Stoplight** ($14.95, Clear Image Audio).[8] A very expensive green felt-tip marker to treat the edges of a CD, purportedly to absorb reflected light. The manufacturer claims that it will "improve clarity, definition, ambience, and makes sound dramatically smoother." This has received more press (both pro and con) than most audio myths. The most interesting item was by Larry Canale in *CD Review* (7, no. 1, September 1990), "R.I.P.: The Green Ink Myth." As with item 2, it cannot alter the sound of a CD.

4. **Distech Powerbridge II** ($169.95);[9] **Cardas Quadlink PC** ($169.95) and **Hexlink V PC** ($249.95);[10] **Tara Labs Phase II PC** ($99.95);[11] **Aural Symphonics Missing Link** ($159.00).[12] Replacement power-

line cords. All promise better sound quality from a CD player. Aural Symphonics promises "increased transparency of wider and deeper soundstage, spatial coherence around instruments and voices, recovery of hidden nuances, increased clarity across the audio band, low frequencies that are cleaner and have more authority, a delicate intimacy of high, seamless tonal balance and holographic musical images." All that from a line cord!

5. **Tice Pulse Technology** (Tice Audio Products, Ronkonkoma, N.Y.).[13] "TPT is a material treatment system which significantly reduces electron noise. Normally, electrons flowing through a conductor move in a somewhat random and chaotic manner. TPT enables electrons to move in a more direct path, eliminating their chaotic movement and the electron noise it creates. The benefits of TPT-treated products are: Less Electron Noise, Greater Clarity, Improved Imaging Capabilities and Better Focus." Electrostatic and magnetic fields control electron movement, not material treatments.

6. **Tweek** ($14.95/7 ml, Sumiko, Berkeley, Calif.).[14] A "contact enhancer" to coat electrical connectors "minimizing loss of signal and power in electrical connections." A sample I tested was electrically inert up to 200 volts. It certainly doesn't do much for conduction; perhaps it prevents oxidation.

7. **Sims CD Reference Bands** ($19.95 per dozen, Sumiko, Berkeley, Calif.);[15, 16] **Monster Cable CD SoundRing** ($14.95 per dozen, Monster Cable, San Francisco, Calif.); [17, 18] **Euphonic Technology CD Ring** (Euphonic Technology, Ridgefield, Conn.).[19] All of these are exactly the same item: an elastic band attached to the outer edge of a CD. They promise "extended bass response, improved clarity and enhanced dynamics. Reduces irritating IM distortion and brightness in compact disc reproduction." Just as in items 2 and 3, nothing applied to a CD can affect the performance of the analog circuitry.

8. **AccuPower** (Euphonic Technology, Ridgefield, Conn.);[20] **NoiseTrapper** ($269.00, Audio Express, Austin, Tex.).[21] Power-line filters are not necessarily a bad thing, but to promise "detail, transparency and imaging your audio components were designed to produce" seems a bit farfetched.

9. **Mobile Fidelity Sound Lab Ultradisc** ($35 typical).[22] These are CDs in which the metallization layer is gold instead of aluminum. Mobile Fidelity states: "The rough, inconsistent, aluminum surface creates 'sonic gaps.' These gaps create 'drop-out,' or areas where no sound is recorded. The player must fill these gaps artificially with error correction." Also Ultradisc claims "higher engraving and reading capabilities." This simply is not true. I have measured many aluminum CDs whose error rate is substantially *less*, sometimes less than *half*, than the Ultradisc. Further, *correctable* errors are not "artificially" filled in; the data are restored exactly to their original values. Only when errors become so massive (greater than 3,874 bits) and error correction is not possible does interpolation take place. In over 56 hours of play (33.6 billion bytes), I have measured only two interpolations on one very old disc.

10. Then, of course, there are speaker cables. Many manufacturers would like you to believe that cables are magic, but they follow the laws of physics just as everything else does. This is a subject quite dear to me, as I have completed an investigation into the behavior of cables, speakers, and amplifiers as a functional system. This work culminated in a mathematical model of that system, which correlates very closely to measured responses. There were some surprises along the way, and the essence of my findings were:
    A. There *are* subtle audible differences between speaker cables. The differences are not dramatic, staggering, or overwhelming as some advertising would lead you to believe.
    B. Bigger is *not* necessarily better. The 3-AWG to 7-AWG cables I tested performed poorly when compared with 12-AWG cables (such as Belden 9718). Also, smaller cables, such as 18-AWG, did not perform as well.
    C. The skin effect does exist in cables heavier than 20 AWG. Heavier cables show much more skin effect, but this is not significant since heavier cables also have lower resistance. The 3-AWG cable showed a resistance increase of 3.42 times at 20 kHz due to skin effect, but this represents a loss of only -0.044 dBV into 8 ohms for 10 feet of cable. Far more significant are the effects of inductive reactance. The same 3-AWG cable in the previous example will show a loss of -0.43 dBV due to inductive reactance.
    D. Higher capacitance in a cable does not reduce high-frequency response. In fact, it can actually improve it. Most assumptions about capacitive effects consider only series resistance and shunt capacitance, which will roll off the high frequencies. Wires at audio frequencies, on the other hand, appear as series *inductance* and resistance with shunt capacitance. The capacitive reactance will subtract from the inductive reactance, lowering the impedance of the wire and improving the transmission at higher audio frequencies. Capacitance in speaker cables is generally quite small. Well-designed amplifiers are not sensitive to capacitive loads, but some may become unstable.
    E. Amplifier characteristics can often overwhelm the effects of a cable, especially one with a poor damping factor driving very reactive, low-impedance speakers. Also, inductive reactance in an amplifier's output will combine with the cable to interact with a speaker, causing frequency-response variations. This interaction causes peaks when the speaker exhibits capacitive reactance and dips when the speaker is inductive.
    F. The best cables are usually made of multiple independent conductors 20 AWG or smaller, arranged in a flat or braided configuration. A simple two-conductor 12-AWG cable will work well, although with a small loss of high frequencies. Measurements at 20 kHz with a good amplifier, 10 feet of cable, and a commercial loudspeaker showed -0.1 dBV loss with an 8-AWG multiconductor cable and -0.5 dBV loss with a 12-AWG two-conductor cable.

Notes

Advertisements for the products mentioned appear in many publications; representative examples are listed below.

1. *Stereophile*, 13, no. 5 (May 1990): 63.
2. *Stereophile*, 13, no. 10 (October 1990): 45-47.
3. *CD Review*, 7, no. 3 (November 1990): 62.
4. *Stereophile*, 13, no. 9 (September 1990): 49.
5. *Stereophile*, 13, no. 9 (September 1990): 51.
6. Ibid.
7. *CD Review*, 7, no. 3 (November 1990): 41.
8. *Stereophile*, 13, no. 10 (October 1990): 69, 210.
9. *Stereophile*, 13, no. 10 (October 1990): 227.
10. Ibid.
11. Ibid.
12. "Missing-Link Audiophile A.C. Cable" (manufacturer's literature), Aural Symphonics, 2016 Flintbury Court, San Jose, CA 95148.
13. *Stereophile*, 13, no. 10 (October 1990): 250.
14. Tweek Contact Enhancer (display package), Sumiko, 3101 Telegraph Ave., Berkeley, CA 94705.
15. *Take5 Audio-File* (audio retailer newsletter), 6, no. 2 (Fall 1990).
16. "CD SoundRings by Monster Cable" (manufacturer's literature), Monster Cable, 101 Townsend St., San Francisco, CA 94107.
17. Ibid.
18. "CD SoundRings Product Review" (manufacturer's literature reprinted from *Absolute Sound*, 13, no. 55, October 1988), Monster Cable, 101 Townsend St., San Francisco, CA 94107.
19. Ibid.
20. *Stereophile*, 13, no. 10 (October 1990): 211, 268.
21. Ibid.
22. Liner Notes from Mobile Fidelity Sound Labs UDCD 517.

Bibliography

For anyone wishing more information concerning CD players and the technology, I recommend the following:

Ken Pohlmann, *Principles of Digital Audio*, 2nd ed. Howard W. Sams & Company, 1989.

David Ranada, "Error-Correction Myths Exploded," *High Fidelity*, 37, no. 10 (October 1987): 45-50

Larry Canale, "R.I.P.: The Green Ink Myth," *CD Review*, 7, no. 1 (September 1990): 5.

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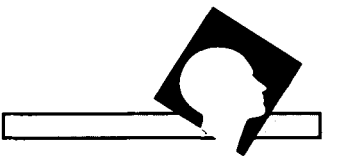
Searching for Extraterrestrial Intelligence

An interview with Thomas R. McDonough

Thomas R. McDonough is an astrophysicist and the coordinator of the Search for Extraterrestrial Intelligence (SETI) for the Planetary Society, the largest space group in the world, with more than 100,000 members on seven continents. Its president is Carl Sagan. McDonough is also a lecturer in engineering at Caltech, a scientific consultant to CSICOP, and the author of several books, including The Search for Extraterrestrial Intelligence: Listening for Life in the Cosmos *and* Space: The Next Twenty-Five Years. *He also writes science fiction on the side, including a novel,* The Architects of Hyperspace. *He was interviewed by Barry Karr, executive director of CSICOP. The interview was first prepared for "The Voice of Inquiry," the new radio magazine of the Center for Inquiry, co-sponsored by CSICOP. It has been revised and updated by Dr. McDonough for the* SKEPTICAL INQUIRER.



"The universe is so big that it seems very unlikely that we could be alone."

Q: What exactly is SETI?

McDonough: SETI stands for the "Search for Extraterrestrial Intelligence" and is the name used throughout the world for projects in which scientists are looking for objective, repeatable proof of the existence of civilizations elsewhere in the universe. Usually SETI is understood as the search for radio signals from other civilizations.

Q: How big is SETI, and are any other countries involved in the search?

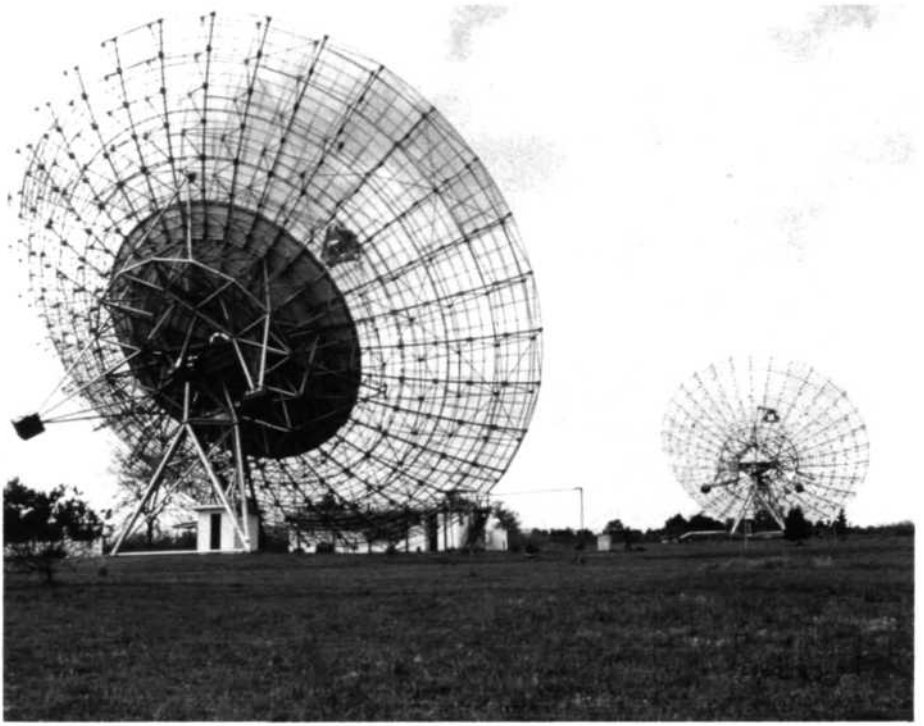
McDonough: There are three main projects in the United States right now, and there are other countries involved, particularly in the Soviet Union and Canada; In Canada, for example, one researcher is now preparing the radiotelescope at the Algonquin Observatory to be used in a future search for extraterrestrial intelligence. The Soviet Union has embarked on a project that will look for radio signals. The first of the three main U.S. projects is at Ohio State University and has been operational for about a decade now; it is the longest-running SETI project in the world. The second is the one that NASA is building. It is not yet running, but will probably be operating in 1992 and will then be the world's most powerful SETI project. And finally there are the ones that I am associated with, the Planetary Society's SETI projects at Harvard and in Argentina. These are the most powerful SETI systems currently operating anywhere in the world.

Q: Why do you think that there may be someone, or something, trying to communicate with us?

McDonough: The universe is so big that it seems very unlikely that we could be alone. The mere fact that we have several hundred billion stars in our own Milky Way galaxy, and the fact that this galaxy is just one of perhaps a hundred billion other galaxies, shows the overwhelming number of places in the universe where life could exist. And the idea that we could be alone in the universe seems unlikely just on those grounds alone. But more than that, when you look at the history of life on earth, and at what we're made of, there is nothing that seems terribly unusual when you compare the conditions on the earth with the conditions elsewhere in the universe. For example, the sun is not a weird star, it's not a rare star, it's one of the more common types of stars in the universe. Or if you look at what we're made of—carbon, hydrogen, oxygen, nitrogen—these atoms are not rare. If we were made out of platinum, for example, I might be worried about the basic ingredients for life not being widespread, but we are made out of some of the most common atoms in the universe, ones that we have detected around distant stars and in other galaxies.

Q: Some scientists speculate that an older, more advanced civilization—provided there is one—would have long ago set out to colonize the universe, much like people on earth talk about our plans to someday establish bases on the moon and Mars. The argument goes that, because we haven't seen them, they aren't here, and since they have had billions of years to reach us, that is proof that there aren't any other civilizations out there at all.

McDonough: That is an interesting idea, but it contains an awful lot of hidden assumptions. One is the assumption that a civilization would want to spread like a virus throughout the whole galaxy and colonize every possible piece of real estate in sight. My suspicion is that a really advanced civilization would find so many ways to use its own solar system—the planets, asteroids, moons, and other resources in space—that it wouldn't have as great a need to colonize an entire galaxy. Now, I could be wrong, but the point is that it's crazy, I think, to jump to the conclusion that just because we don't see our own planet being colonized by extraterrestrial beings it means that we are alone in the universe. This is what some people claim.



SETI in Argentina, sponsored by the Planetary Society. (Photo courtesy of the Argentine Institute of Radioastronomy and the Planetary Society)

Q: With the vast amount of noise being generated from the earth, from radio, television, and such, how can you filter through all of that interference? How could you hear a signal if there was one out there?

McDonough: That's a very difficult problem, especially for the NASA system, which looks at all microwave frequencies from 1 to 10 GHz. But in our system we've narrowed down the search. Paul Horowitz, the Harvard scientist who designed and built the system, proposed several years ago that we look for what we call ultra-narrowband signals. What that means is looking for signals that are much narrower than the noise that Mother Nature produces. Nature produces signals that, even in the narrowest cases, are usually spread out over many kilohertz of frequency, very much like a radio broadcast signal on the planet Earth. And so both the artificial signals on Earth and the natural signals of Mother Nature are spread out over a large range of frequencies. What we do is look for very, very narrow signals, signals that are .05 hertz wide, much smaller than even normal radio-station signals. By doing that, we automatically reject most sources of noise, both from nature and from our own civilization. In the Planetary Society SETI programs, we look at eight million frequencies clustered around natural frequencies, such as that of hydrogen (1420 MHz) and hydroxyl (the OH molecule, 1700 MHz). In the NASA system, they will use larger bandwidths and cover a much larger range of frequencies. For them, it is necessary to develop software to recognize

"We are made out of some of the most common atoms in the universe, ones that we have detected around distant stars and in other galaxies."

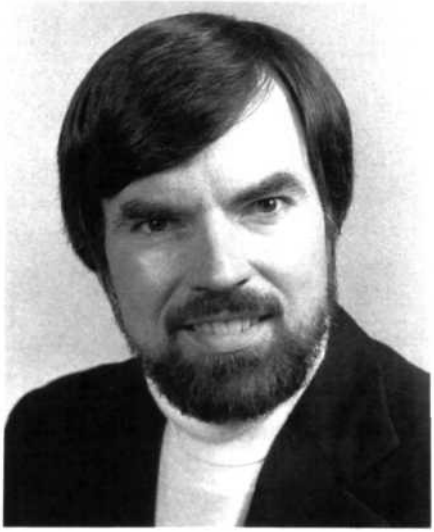
the horrendously complicated noises that our own radio, TV, radar, and satellites produce.

Q: Why do you think a civilization would use those particular frequencies?

McDonough: The best reason would be to avoid the problem of the noisy nature that we live in. The galaxy is chock-full of sources that generate noise. There are gases in space, and magnetic fields, and other things that generate all kinds of noise. In fact, when you tune a radio between stations, part of that hiss that you hear is the hiss from our own galaxy. Or when you look at a television set that's not turned to a local station, then you get snow. And part of that snow is from space. So one of the ways that one civilization could make its signal readily detectable to another civilization is by concentrating all of that energy into the narrowest possible bandwidth, and we calculate that the narrowest practical bandwidth would be around .05 hertz.

Q: How do you know which stars to look at when searching for radio signals?

McDonough: There are two different strategies. The one we use is to search the entire sky. So at Harvard we aim the antenna at one part of the sky, and we let the earth rotate for 24 hours. That allows the antenna to see a strip of sky about half a degree wide during those 24 hours. If we don't see anything, then we raise the antenna another half-degree and look



Thomas R. McDonough coordinates SETI for the Planetary Society.

at the next strip. The NASA approach is interesting because they are going to combine this kind of technique, which is called the "All Sky Survey," with another type called a "Targeted Search." In a Targeted Search, what you do is look at stars that are similar to the sun, because we think those are the best bets for where life could arise. And so NASA will choose several thousand stars that are much like our sun and focus part of their effort on those stars, and look at a higher level of sensitivity then.

Q: Perhaps we should discuss the differences between SETI and a belief in Unidentified Flying Objects. You believe in the probability of other intelligent life in the universe, but you are critical of reports of UFOs visiting the earth. Why?

McDonough: That's a very sensitive point. The problem is that UFO reports, although interesting to me, are contaminated by so many uncertainties. You don't have a repeatable phenomenon. For example, there has never been a UFO that always came

"It has been very difficult to make the public and the Congress understand the difference between UFO investigations, which are so often flaky, and SETI investigations, which are supported by many of the leading scientists in the world."

down on the White House lawn at noon every Thursday, which you could go out and check. It is always a case of someone reporting a UFO once, and then it goes away. In the few cases where there have been repetitions, usually we have been able to prove that it was just a natural phenomenon or a hoax. And no one has ever found a piece of material from a supposed UFO landing, a piece of garbage or anything else, that you could take into a laboratory and analyze and show that it was not something from planet Earth.

Q: Would you rule out UFOs visiting here because of the vast distances in space?

McDonough: Well, actually, most of my colleagues do, but I'm not quite that pessimistic. In my books I talk about techniques we can already envision on the drawing board that an advanced civilization could use to travel between the stars. But it's a lot more difficult and a lot more expensive than most people realize. It's certainly not as easy to do as it is in Star Trek.

Q: Is there a lot of public confusion between SETI and UFOs?

McDonough: There is, and it's one of the headaches we have in this business. Although there have been a few careful UFO investigators, many of them have been very sloppy and very poorly trained, and they have been easily fooled by natural phenomena and hoaxes. So the public tends to think that anyone looking for extraterrestrial beings is automatically involved with UFOs. The scientists who are involved with the SETI project, then sometimes feel contaminated by UFOs, and they don't want to get involved with them because it's such a can of worms. So it has been very difficult for us sometimes to make the public and the Congress understand the difference between the UFO investigations, which are so often flaky, and the SETI investigations, which are supported by many

of the leading scientists in the world.

Q: Since all of the polls show that a majority of Americans believe in UFOs, or believe they have seen UFOs, I would think that because of this confusion SETI might be reaping some benefits in public support.

McDonough: Sometimes I think it might, but for the most part we haven't gotten any benefits. Instead we've gotten a lot of problems. The worst one was several years ago when Senator Proxmire killed the entire NASA SETI program because he didn't understand the difference between the flaky people who were too often involved with UFO searches, and the legitimate scientific support for the SETI projects throughout the world.

Q: Did Senator Proxmire give SETI one of his Golden Fleece Awards?

McDonough: Yes, he did. In fact, even before he killed the project, he had given SETI a Golden Fleece Award. And that wasn't enough to satisfy him. He then actually passed a special amendment to the budget that said that NASA could not do anything at all connected with SETI.

Q: That's since been overturned.

McDonough: Right. And in 1990, during the turbulent budget crisis, Congress first killed SETI, but then reinstated it.

Q: Steven Spielberg has probably done a lot to promote belief in UFOs with films like *Close Encounters* and *ET*, but I also know he's a very strong supporter of SETI. It's good to see him devoting time and money to real science, to the real search.

McDonough: Yes, like me, he likes to distinguish between science fiction and science, and he knows the difference. In science fiction, of course, we can go beyond what is known or proved. I was delighted to see him contribute $100,000 to our Planetary Society search at Harvard, enabling us to vastly increase the power of our search.

Q: We actually couldn't converse with extraterrestrials if we did pick up a signal, could we?

McDonough: No, not in the sense of our saying, "Hi, how are you," and their responding, "Well, we're doing pretty good. How are you?" The problem is the enormous distances that exist in the universe. It would mean that, for example, even if they're a light-century away, a hundred light-years away, it would take a hundred years for our signal to get from here to there. And then if they replied, it would take another hundred years for that signal to get back. So it's not the kind of spirited conversation that you would like to have.

Q: Then what would be the benefits of receiving such a signal, of hearing from another civilization?

McDonough: Well, the greatest benefit would just come from knowing that there is another civilization out there. Right now, without that knowledge, we tend to think of ourselves as being unique in the universe, and for people in one culture to think that they are special and very different from people in another culture. So the Russians, the Chinese, and the Americans all think of themselves as being very different from one another. But if suddenly we had positive proof that there were some two-headed little green men in another world with a more advanced civilization, we would begin to see ourselves as a single species in which our differences were trivial compared with the differences between us and them.

Q: Why do you think that if we picked up a signal it would have to be from a more advanced civilization than our own?

McDonough: That's because the

civilizations that are not as advanced as we are probably don't have technology we could detect yet. We've been on this planet for millions of years as human beings, but we've only had technology capable of spanning the distances between the stars for the past century. That's when radio was invented. That means that we're not going to be able to detect a civilization at the level of ours at Isaac Newton's time because they didn't have radio. There could be civilizations out there at that level, but we will never detect them with our present technology.

Q: What do you think the message would be? What could they teach us?

McDonough: Oh, I think they could teach us almost everything, because a civilization that is more advanced than we are probably would have solved many of the problems we are now facing: problems of pollution, overpopulation, disease. They may have an encyclopedia that they are just broadcasting at us, which has the answers to all of our questions: how to prevent cancer, how to cure AIDS, and so forth. If we just pick up that information and can decipher it, then we may have a way of jumping ahead thousands of years in our scientific understanding and solving all of our problems.

Q: You said earlier that the NASA project, once it gets under way, could take a decade to finish. What happens if in ten years we don't pick up a signal?

McDonough: I'll be very depressed. What it would mean really is that there won't be any radio signal of the kind we're looking for, but that there could be other signals out there using a technology that we haven't tried yet, or haven't discovered yet. Or it may mean that the signals are not beamed at us, or are not at the frequencies we've used. Most of the thinking so far has gone into detecting signals that

"My suspicion is that, once life evolves on a planet, intelligence has many opportunities to arise during the billions of years the average star shines. Just one success, and they own the place."

are beamed like a lighthouse beacon toward us, because those kind are much easier to detect, even though they are still hard. If they're not beamed at us, if they are just alien "I Love Lucy" shows leaking off into space, then we are going to have to use a much more powerful technology that we don't yet have, and that we can't afford to develop right now. For example, we'd probably have to set up giant radiotelescopes in orbit around the earth, or better yet, on the far side of the moon.

Q: What are the benefits of SETI if we don't ever hear from someone else?

McDonough: Well, if we don't, then the first benefit is that we become convinced that we are alone in the universe, in which case we have to be very careful of our own life. It will make us realize the unique value of our own planet in the universe. And second, it will mean that we will have searched the sky very carefully and probably will have made astronomical discoveries. One of the nice things about SETI is that as you search the sky looking for signals from other civilizations, you automatically discover other objects in the universe, like pulsars, for example.

Q: What is currently exciting? What's currently happening in SETI?

McDonough: The most exciting thing, to me, is the involvement of Argentina in the SETI program. The

"If we don't search, we'll never find anything. If we do search, the least we'll do is explore the universe. Let's do it!"

Planetary Society has an agreement with researchers in Argentina. Two Argentine engineers worked with Paul Horowitz at Harvard building a duplicate of its SETI project. They then took it down to Argentina and installed it there at a radiotelescope. Now we have the full-time observation of the Southern Hemisphere sky. This is the first time that we've systematically studied the southern half of the universe. Up until now, most of the studies in SETI have been in the Northern Hemisphere, and if there is a civilization in the Southern Hemisphere sky we would probably have overlooked it.

Q: Some biologists claim that the probability of intelligence evolving is very small, since out of the billion species that have arisen here only one has achieved our level of intelligence. (See the following article by Zen Faulkes.)

McDonough: Multicellular life has only existed for half a billion years, but our sun will continue to shine without much change for another five billion years. This means that, if we hadn't evolved, billions more species would have arisen.

All it takes is for one species to succeed. Already there are many species on our planet with brains similar in size to ours: dolphins, whales, apes, elephants, and so on. If we hadn't come along, chimpanzees or gorillas might have continued to evolve larger brains. Or maybe bears or some other very different creatures would have succeeded.

As soon as a rudimentary intelligence arises—something comparable to the first tool-using primates—then the smarter ones start outwitting their less-brainy competitors. This means they can have more offspring than the dumber ones. Intelligence gives a creature the ability to defeat its competitors and to survive climate changes.

The game of life is a lottery in which you get billions of chances to play. My suspicion is that, once life evolves on a planet, intelligence has many opportunities to arise during the billions of years the average star shines. Just one success, and they own the place. If I'm right, SETI will probably succeed. If I'm wrong, it will probably fail. That's good science: a testable prediction.

Q: How would you summarize the arguments in favor of SETI?

McDonough: Nobody on earth truly knows whether we're alone or if the universe is buzzing with life. Sticking our heads in the ground never got us anywhere in science. If we don't search, we'll never find anything. If we do search, the least we'll do is explore the universe. Let's do it! ■

Getting Smart About Getting Smarts

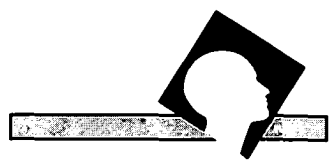
Evolutionary Biology and Extraterrestrial Intelligence

ZEN FAULKES

Does extraterrestrial intelligence exist? We could search as close to forever as time allows and never have a definite answer: no matter how long we fail to find a trace of intelligent alien life in the galaxy, no matter how long we pile up negative evidence, there will always be other places to look.

Some say that because it cannot be falsified, the question of the existence of extraterrestrial intelligence is not a scientific one. I disagree. First, the possibility of a definite answer does exist: we could find an alien civilization. Second, the traditional hallmark of good scientific theory is that it is able to predict, control, and explain. Why would it not be fair game to use our current theories to predict the likelihood of alien intelligence and explain why it is probable or not? Last, the potential consequences for science and human experience in general are incredible. Considering the stakes, the search for extraterrestrial intelligence (SETI) is a game that science almost has to play at some level, whether it be a full-scale search for alien radio signals or something more modest. A recap of opening gambits in SETI is in order before considering two recent works from life scientists Stephen Jay Gould (1989) and Jared Diamond (1990).

Scientific discoveries have, time after time, displaced us from holding a unique position in the cosmos. Earth has been progressively downgraded from the center of the universe



Biology seems to show that the possibility of intelligence evolving elsewhere may be far smaller than astronomers supposed.

to no place special. Biological theories shifted us from God's best and brightest to one organism among many shaped by the forces of evolution. With such a legacy of scientific thought, brute historical induction made it reasonable to declare, "There's no way that we're the only intelligent life form in the cosmos." James Christian (1976) summarized the feeling well:

> The very notion that life is unique to planet earth rings in our minds today like an arrogant aristocentrism, a leftover chauvinism of the sort we recognize in other areas of our thinking and are gradually outgrowing. These inordinate claims to uniqueness and centrality—so understandable before man became informed about himself and his relationship to the natural world—sound like medieval anachronisms. Today such claims just feel wrong, and they no longer compete for intellectual credibility.

Unfortunately, claiming that a proposition "feels wrong" never gives it special ontological status.

A useful "lens" that focused SETI debates from such fuzzy claims to sharper propositions was the famous formula developed by Frank Drake in 1961. It estimates the number of civilizations (N) that we might hope are out there for us to contact using radio astronomy:

$$N = N_* f_p n_e f_l f_i f_c f_L$$

It looks formidable, but the logic is straightforward. All the *f*s represent fractional values that will reduce the final value of N.

N_* is the number of stars in our galaxy; the raw material, as it were.

f_p is the fraction of stars that have planetary systems.

n_e is the number of worlds in a planetary system capable of supporting life. This is not limited to planets, but includes the possibility of life evolving on a moon. For example, the Jovian moon Europa remains a candidate for having indigenous life. Jupiter is another candidate, and Mars might sustain life of some sort if it were introduced there.

f_l is the fraction of planets capable of supporting life that generates life.

f_i is the fraction of biospheres that evolve an intelligent species. "Intelligence," one of science's great weasel words, is a concept that begins to fall to pieces if examined closely. Here it denotes a species that makes extreme uses of language, numbers, and tools, or a species that could create radio technology.

f_c is the fraction of those smart species that have the cultural inclination to create advanced communication technology. The majority of Earth societies (such as the American natives, the Australian aborigines, and many Asian cultures) showed no moves toward such advanced technology. The tradition of Western European science and technology seems to have been the exception rather than the rule.

Finally, f_L represents the average life span of an advanced technological civilization: it is expressed as a fraction of the planet's life span that it is inhabited by an intelligent life-form.

The appropriate estimates for most of these variables are, to say the least, problematic.[1] Nevertheless it is clear that if any *one* value on the right side of the equation approaches zero, the rest is moot. The final variable, f_L, has traditionally been the prickliest of the lot. Considering that people lived for decades with the fear of an apocalyptic atomic war, and had *that* replaced with the prospect of planetwide environmental collapse, it's not surprising that many felt civilizations tended to self-

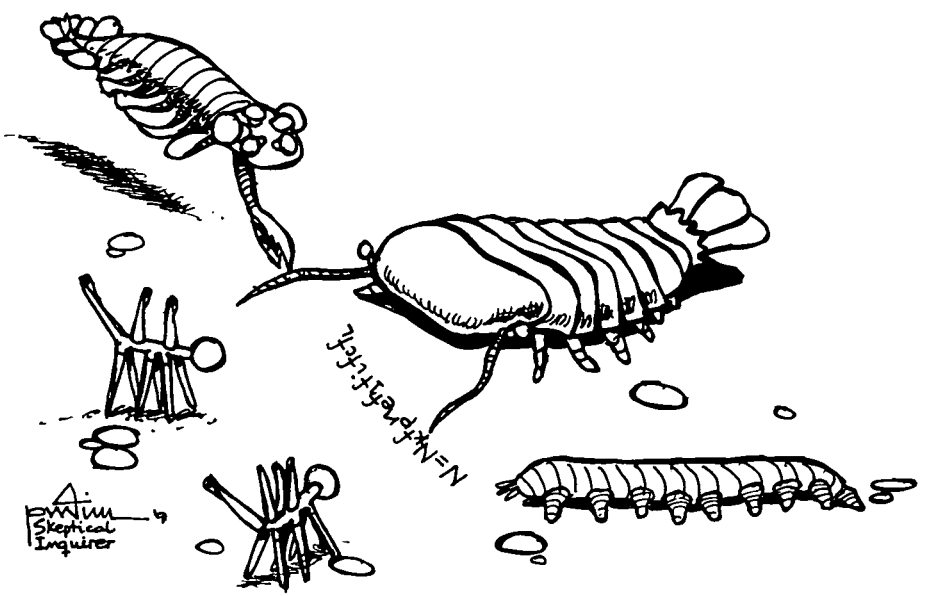
destruct before getting around to a SETI program.

Few have focused on the variable Drake termed f_i—the probability of intelligence evolving in a given biosphere—and most have given high estimates for it (Edelson 1978; Russell 1981; Smith 1976). Some put it at 1.0, or unity: intelligent life always evolves. A few claim even *that* could be an underestimate and suggest that it may be rather common for two or more intelligent species to co-evolve and share a biosphere. (Those who do often cite dolphins as a second intelligent species here on Earth.)

Most of the people involved with SETI and Drake's formula, however, are physical scientists whose everyday work is connected to space (astronomers, physicists, and the like). Evolutionary biologists are rarely involved, perhaps because their near-univocal estimate of f_i has been far closer to zero than one. The warning from evolutionary biologists hasn't permeated into general consciousness, even though it has been sounded before (Mayr 1985; Simpson 1964).

Stephen Jay Gould's (1989) book *Wonderful Life* examines the fossil records in the Burgess Shales. The Burgess Shales, located in Yoho National Park in British Columbia, contain superbly preserved invertebrate fossils from a period in history just after the "Cambrian explosion" and before a mass extinction. The Cambrian explosion refers to a time, 570 million years ago, when multicellular animals arrived on the scene and proliferated in the blink of an eye (in geological time, of course). There seem to have been almost no precursor species to Cambrian organisms: virtually nothing but unicellular organisms before and full-blown invertebrates after. The Burgess Shales contain the results of the Cambrian explosion, when the fauna was at its richest.

As for the kinds of creatures preserved in the Shales, the word *weird* only hints at a description of the



oddities that have been found. *Opabinia* was a critter with five eyes and a vacuum-cleaner-like appendage near the mouth. *Wiwaxia* was somewhat snail-like, but had a shell of spines and plates that it molted occasionally, much like arthropods do today. The list goes on. There were many bizarre organisms that are unique to the time the Burgess Shales were formed. They died out soon afterward and left no descendants.

With this fossil record in hand, Gould elaborates an interpretation of life history that is completely contrary to the two most common views of evolution. One typical view is that life tends to diversify, starting with a few basic forms that radiate out into many more specialized and complex species over time. The other view is more relevant to this discussion, is more powerful, and has an older history. It has many names: "the march of progress," a ladder of increasing complexity, the "Great Chain of Being," *scala naturae.* Bluntly, it is a view that life progresses toward greater complexity and "perfection." The inevitability of intelligent life-forms is a logical corollary. Scientists who put the value of f_i near unity plainly have this conception of the evolutionary process in mind (Russell 1981). Smith's (1976) claim is typical: "Biological evolution toward greater intelligence naturally occurs as different organisms compete for survival."

However, the Burgess Shales show something different. The Burgess animals just don't fit in with the conventional views of evolution: they are the square pegs that won't go into the conceptual round holes. The Burgess organisms are so unique that many of them stand alone taxonomically, in their own phyla or classes. The large number of high-level taxonomic categories indicates that, while the total number of species (the diversity of life) has increased, the number of basic body plans (which Gould terms the disparity of life) has *decreased.* And here's the kicker: as far as we can tell, *the creatures that survived were not noticeably better adapted than those that went into the rubbish bin.* Those that got through the mass dying seem to have done so by getting lucky.

Gould argues that this wasn't a unique, one-time-only occurrence, but that the evolutionary pattern *in general* is one of disparity, decimation, and then increased diversity in the remaining forms. Couple this thesis with the number of mass extinctions that have occurred (about five), and the inescapable conclusion is that the survival of our ancestors "just happened." Gould imagines what it might be like if it were possible to go back in history and let it all happen again, and sketches several possible worlds where no intelligent life ever appeared. We and our intelligence are the result of contingency, a series of happy evolutionary accidents from Buster the lungfish on down. Intelligent life-forms are an event on this world, claims Gould, and *not the end result of a trend.*

One could argue that, while human intellect is certainly a contingent fact of history, there might be more than one path to intelligence. For example, there was certainly more than one evolutionary pathway to complex organs like eyes. Humans and octopuses have eyes that are positively eerie in their similarity. The likeness is not due to common ancestry but is the result of independent solutions to similar problems. Other examples of analogy include the wings of bats and birds and the similarity between dolphins and extinct icthyosaurs.

How much weight can the argument from analogy bear? The answer,

according to Jared Diamond (1990), is: not as much as it seems at a first glance. Consider woodpeckers. Woodpeckers have a terrific ecological niche. By excavating into live wood, they have shelter, a nesting site, a reliable food source, and more. There doesn't seem to be anything particularly difficult about evolving the morphology needed to exploit the niche; bits and pieces, or close precursors, can be found in other birds. Nevertheless, all evidence shows that woodpecking evolved only once. No other animal exploits the niche nearly as well, even in locations where woodpeckers have never lived (such as Australia and New Zealand), and the niche probably would have remained vacant if woodpeckers hadn't seized it.

If no other animal has capitalized on this wonderful lifestyle, what is the likelihood that other animals would seize on something much less likely to benefit them, such as, say, radio technology? Even something seemingly as straightforward and valuable as the ability to digest plant material has never been quite mastered by any vertebrate. Although the logical leap is a long one, Diamond's point is much like Gould's: *life is opportunistic*, but not all opportunities are seized or are successful. Species do not cram into every available environmental niche at any time, and vast realms of opportunity remain unrealized.

The traditional way of determining the value of Drake's f_i has been to look at our world and assume, in lieu of other evidence, that it is an average life-supporting planet. Based on the commonplace (but, as evolutionary biology shows, wrong) view of evolution, the equation is thought to be:

f_i = one intelligent species/one biosphere

Instead, the formula should be:

$$f_i = \frac{\text{one intelligent species}}{\text{every species that ever lived}}$$

Conservatively estimating the number of species throughout history at one thousand million, this new calculation puts f_i in the ballpark of 10^{-9}. While it may not be zero, it's a far cry from the more commonly cited value of almost one.[2]

Unlike some, however, I cannot find it in myself to end this article by saying that SETI is a waste of time, money, and effort. The first reason is best stated by Carl Sagan (1980).

> If we were to carry out a rigorous search for extraterrestrial radio signals encompassing millions of stars and and heard nothing, we would conclude that galactic civilizations were at best extremely rare, a calibration of our place in the universe. It would speak eloquently of how rare are the living beings of our planet and would underscore, as nothing else in human history has, the individual worth of every human being.

Certainly, the incredible improbability of alien intelligence should be taken into account when deciding how much of our effort SETI should occupy, but I would be disheartened to see the search stopped. Pasteur said, "Chance favors the prepared mind." While it's not quite true (if chance "favored" anything, it wouldn't be chance, would it?), it does capture an empirical generalization that those even marginally ready for unlikely happenstance are the ones who take best advantage of incredible strokes of luck. The fallout for all the sciences, especially the biological sciences, would be so gargantuan if we did contact an alien intelligence—if yet again our best estimates were mislead-

ing—that it seems foolish to abandon the entire affair. SETI remains an intellectual game worth playing, even if only on a small scale.

Notes

1. In the absence of further data, we can assume that our planetary system and biosphere are roughly average, cosmologically speaking. Here is one set of estimates for Drake's formula (Sagan 1980). The value of f_i is the focus of the rest of this paper.

$$N_* = 4 \times 10^{11}$$
$$f_p = 0.33$$
$$n_e = 2$$
$$f_l = 0.33$$
$$f_i \times f_c = 0.01$$
$$10^{-8} < f_L < ?$$

We have now had radio technology for less than one-millionth of Earth's history. To be more exact, f_L 10^{-8}. If, however, advanced technological civilizations are fairly durable, they might remain for as much as one percent of a planet's history, in which case, $f_L = 0.01$.

Using these figures, the number of advanced technological civilizations currently in existence could be as few as ten or as many as ten million, depending on your choice of a fraction for f_L.

2. Inserting this value of f_i into Drake's equation with the estimates given above, N becomes the probability of there being *one* other technologically advanced extraterrestrial civilization in existence. Depending on your estimate of f_L, N now ranges from 10^{-8} (one in one hundred million) to 10^{-2} (one in a hundred).

References

Christian, James. 1976. The story of life: Earth's four-billion-year beginning. In *Extra-Terrestrial Intelligence: The First Encounter*, 15-31, ed. by J. Christian (Buffalo, N.Y.: Prometheus Books).

Diamond, Jared. 1990. Alone in a crowded universe. *Natural History*, June, pp. 30, 32, 34.

Edelson, Edward. 1978. *Who Goes There?* (New York: McGraw-Hill).

Gould, Stephen Jay. 1989. *Wonderful Life* (New York: W. W. Norton).

Mayr, Ernst. 1985. The probability of extraterrestrial intelligent life. In *Extraterrestrials: Science and Alien Intelligence*, 23-30, ed. by E. Regis (Cambridge, U.K.: Cambridge University Press).

Russell, Dale A. 1981. Speculations on the evolution of intelligence in multicellular organisms. In *Life in the Universe*, 259-275, ed. by J. Billingham (Cambridge, Mass.: MIT Press).

Sagan, Carl. 1980. *Cosmos* (New York: Random House).

Simpson, George Gaylord. 1964. The nonprevalence of humanoids. *Science*, 143:769-775.

Smith, Ronald. 1976. The education of human intelligence. In *Extra-Terrestrial Intelligence: The First Encounter*, 147-159, ed. by J. Christian (Buffalo, N.Y.: Prometheus Books).

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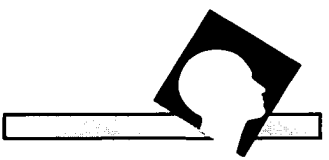
Carrying the War Into the Never-Never Land of Psi

Part I

SAMUAL T. GILL

Based on the offensive strategy that decided the outcome of the Punic Wars between Rome and Carthage, the phrase "Carrying the war into Africa" has come to symbolize a positive, aggressive, forward policy. Advocates of reason would do well to adopt it. Too often, I think, we display a sort of intellectual "fire-base psychosis" and end up preaching only to ourselves. However, we can "carry the war" into the never-never land of psi, squarely confront the minions of nonsense on their own ground, and win. It's no contest. I've had success for years, and I'd like to share some tips on how it's done. You, too, can be a ghostbuster—and more readers of this journal ought to be. It's easy! It's fun!



Advocates of reason can squarely confront proponents of paranormal nonsense on their own ground—and win. Here are some tips on how to do it.

Since 1981 I have taught a well-attended debunking class, "Unsolved Mysteries and Extraordinary Phenomena" (see *SI*, Fall 1982), at local community colleges. I have spoken on paranormal topics before groups as diverse as Kiwanis, MENSA, Unity, and the Dowsing Society. I have been an interviewee and panelist on numerous local radio and television shows, exhibited and addressed sizable audiences at local "psychic" gatherings, written debunking copy for various newsletters, commented rationally on uncritical pro-psi articles for the print media, and upheld the voice of reason at every class, session, séance, harmonic convergence, and love-in I could find time to seek out. If more rational people did this,

fewer irrational gurus would feel called upon to purvey nonsense. No one likes a verbal pie in the face, especially when it's self-inflicted. And, as we shall see, the most valid old saw of psi is indeed that "the presence of skeptics inhibits psi powers." Amen. Seek these people out and confront them. They are easy enough to find.

In almost any community nowadays you can nearly always find some psi-oriented group, association, "research society," or coven that sponsors classes, speakers, séances, "psychic fairs," and the like. Join up. They are always looking for members. Get on the mailing list. Attend advertised events. Speak out whenever you get the chance, and ask the questions that naturally come to mind.

While these groups may well include some thoughtful members, curiosity, open-mindedness, and critical judgment will be hard to find. To be fair, most members are basically sincere and trying to deal with problems that concern everyone. Even the dishonest are, as often as not, just dishonest with themselves. Such organizations are invariably faction-ridden. There is always the eternal, usually bitter division between the "ins" and the "outs." You will make enemies whenever you fail to accept some locally established miracle-worker at face value, and you will have to suffer discourtesy and personal abuse while keeping your own temper. When you do so, however, you will find that you attract your own partisans. You will at least serve as a focus for the kind of internal dissent that may lead to more rational thought. It's a trade-off well worth making.

Before taking up ghostbusting, however, you must develop inquiring attitudes, and they must become second-nature to you. Their adoption will treble your effectiveness and help you to maintain your sanity.

You will find that ghostbusting is a natural *result* of your activities; it is not necessarily your *objective*. After all, wouldn't you love to master all the advertised psi skills like out-of-body experiences, PK, precognition, dowsing, and so on, that you hear are so common? Who wouldn't? The object of your inquiry is therefore not to *disprove* anything, but to bring out the best evidence *in favor* of psi phenomena. You differ from true believers seeking the same reassurance only in that you have a rational method of inquiry and scientific standard of proof.

Don't expect to change attitudes overnight by the force of your personality or the weight of your logic. You're not looking for disciples who exchange one authority figure for another by switching from belief in Edgar Cayce to belief in you, anyway. Your goal is to teach methods with which people can learn to think rationally for themselves. This will often be a lengthy process. After an appearance, don't look for people to press your hand moistly and exclaim, "Your little speech has opened my eyes. . . ." Most people would rather die than admit even the possibility that they could be wrong. It's a brand-new idea for most people that the evidence of their senses could be wrong, or that they could be fooled. This is especially true in the psi field, where proponents are always absolutely certain of their revealed truths. Certainty, after all, is practically their sole stock in trade.

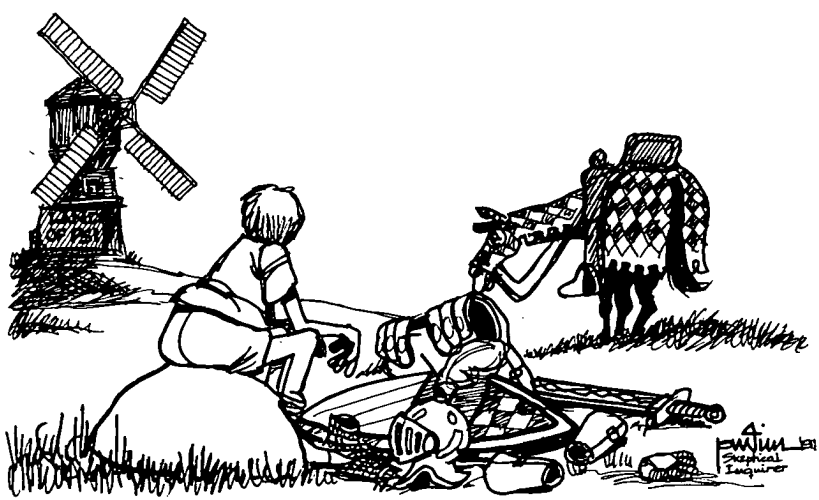
So don't get discouraged by finding yourself in a minority of one. You are, remember, in hostile territory, well behind the lines, and must rely solely on yourself, most of the time. Keep your temper. You will meet with obstructive attitudes, anger, obscure rules applied only to you, personal attacks, endless digressions well off

the point, censorship, and unreasoning stupidity willful enough to move Mother Theresa to fury. Don't take it to heart. Consider the source, and always remember that all these tactics are signs of *weakness.*

If any of them really had any convincing proof in favor of the psi powers they're touting, they would be happy to rub your nose in it—and convincing evidence, not personal triumph in disproving something, is what you're after. You can never *disprove* an irrational assertion. As James Randi notes, it is *possible* that somewhere, sometime, some reindeer may have flown. Your task as a ghostbuster is not to ridicule such a belief, but rather to make plain the type and quality of evidence that *supports* it. The flimsiness and absurdity of these supports will (I assure you) be ridiculous enough without you laboring the point. You will gain much more by example than by argument; you will be much more effective when you courteously show people how to think for themselves than when you aggressively tell them what to think.

Now, in your confrontations with paranormal claimants, always remember two basic principles: (1) the burden of proof is on the claimant, and (2) extraordinary claims require extraordinary proof. Articulate these principles clearly and often. I have a favorite story that is handy in illustrating how sound judgments are made: Let's assume (I tell my audience) that we are sitting on a jury, hearing testimony about a hit-and-run case. An articulate, intelligent, and charismatic witness testifies with every appearance of sincerity and conviction that the defendant did indeed run over the plaintiff—but there were extenuating circumstances. The defendant (our witness swears) swerved his car to avoid a Bigfoot crossing the road. Or, the UFO hovering overhead at the time suddenly took control of the vehicle. Ask your audience if they would give any credence to such sworn testimony in a law court. If not, why would they accept such stories as "proof" before the much tougher standards of scientific inquiry? If Edgar Cayce had given a "life reading" exonerating serial killer Ted Bundy, how many would have thought this evidence convincing enough to free him? Ask for a show of hands.

The idea of weighing the *quality* of evidence will be a new one for true believers. So you ask paranormal



claimants to explain to you (1) what they believe, and (2) why they believe it. What is the convincing evidence *in favor* of a particular belief? Don't argue. Just pin down the specifics. Once you have identified the "evidence" that supports the belief, go on to ask, "Is that evidence any good?"

After you have chosen your target group and adopted an inquiring attitude, the first thing to find out is exactly what claims are being made. Can your occultists predict the future? Take out-of-body trips? Find objects by dowsing? Identify personality traits by astrology? Diagnose illness by psychic means? Demonstrate PK? Telepathy? Clairvoyance? Are they convinced that the woods are populated by Bigfoot, the skies full of extraterrestrial spacecraft, or the lakes swarming with Nessies? *Listen* to their claims first. *Then* ask pointed questions. In the absence of challenges, most claimants will babble freely about their alleged "powers." Keep quiet. Let them run on. Encourage the clearest and least equivocal statement of occult claims. You will have to listen to some boring, derivative, pedestrian tales that were old hat in Caesar's day, but be patient.

Once you've heard the claims, it's time to talk about evidence. What evidence supports these claims, you ask, reminding the group again that (1) the burden of proof is on the claimant, and (2) extraordinary claims require extraordinary proof.

As soon as you mention "evidence" and "proof," you automatically hint that you don't swallow whole whatever pablum you've just heard. The claimant and his or her disciples will thereupon raise some form of some (or all) of the following smokescreens, which can be dealt with more or less as illustrated below:

Smokescreen 1: Some truth transcends the need for proof. . . .

Response: Right! (you'll agree). Transcendental, religious "proof" has to be accepted or rejected solely on faith. Is what you believe (about Bigfoot, UFOs, dowsing, astrology, etc.) your religion? If not, it's subject to inquiry based on evidence. If so, did God tell you this or that was correct? Funny, He told me just the opposite when I talked to Him. . . .

Smokescreen 2: But my teacher is so *sincere* and *convinced!* He (or she) wouldn't lie to me. . . .

Response: He (or she) sure is sincere, and no one is being accused of falsehood. However, sincerity is not evidence and conviction is not proof, especially where extraordinary ideas are concerned. We might, for example, believe sincere testimony that someone keeps a dog in the backyard; but if they said they had a unicorn there, wouldn't we want to see it? Many quite sincere people are very strongly convinced that fairies come out at night and that the earth is flat.

Smokescreen 3: Don't take my word for it. You can learn to dowse/see auras/take out-of-body trips/do PK yourself.

Response: Great! I'd love to! But before I put in the time and shell out the cash, I want to do a little consumer research. I want to assure myself that those who are teaching can do what they claim to teach in the first place. How about a demonstration?

Smokescreen 4: Your mind is so closed. . . .

Response: Oh? I thought an open mind was one that was able to consider any possibility before coming to a conclusion, and one able to *change* under the impact of *new* and *convincing* evidence. Now, I can think of evidence

that would convince me that you are right and I am wrong, that you really can levitate/communicate telepathically/diagnose psychically/raise the dead. Is it possible, though, that *you* might be wrong and that the evidence that has convinced you is only poor evaluation, low standards, and wishful thinking? (The answer you will invariably get is "No, never!") You then go on to ask, "Who, then, has the open mind here?"

Smokescreen 5: You can't prove I'm wrong!

Response: You're right. I can't and I'm not trying to. You can't prove me wrong if I say I'm God either, but the only evidence *in favor* of that idea is that I say so. Perhaps you can do what you claim. I'm not sure you *can't*. What I'm asking is only: What is the *best* evidence *in favor* of your contention? Is testimony and your word the *best* there is? Do I have to base my decision only on that kind of low-quality, subjective stuff? Do I have to take you on faith?

Smokescreen 6: Science doesn't know everything. . . .

Response: Right! Science isn't a bunch of memorized facts. It's a *method of finding things out.* Science works by amassing the best evidence *in favor* of an idea and then evaluating by asking: Is that evidence any good? Is there a simpler explanation? Is there evidence against the idea? Can we make tests that will show if the claim is sound?

Smokescreen 7: Well, ESP/reincarnation/channeling/psi/dowsing/PK are all "spiritual" anyway. Look at the miracles in the Bible!

Response: Baloney! The Bible is uniformly and harshly critical of psi-type powers. They knew a con-game when they saw it 3,000 years ago. Consult Isaiah 2:6, 8:19, 19:3-4, and 47:13-14; Jeremiah 10:2-3, 27:9-10, and 29:8-9; Deuteronomy 18:9-12; Leviticus 19:26, 19:31, and 20:6; Hosea 4:12; and Ezekiel 8:17. There is nothing whatever "spiritual" about psi.

Smokescreen 8: Their studies were more advanced in ancient times/other countries/the East/the Soviet Union.

Response: Do you think there are no crooks, cranks, or charlatans east of Suez or behind the (former) Iron Curtain? Stick to the point. What *evidence* convinced *them?* Was that evidence any good, or only wishful thinking?

Smokescreen 9: I've made a study of this and I know what I'm talking about.

Response: That's right, you have. And that's why I've come to sample your expertise. However, it's unscientific (and un-American, too, when you think about it) to just take an "expert's" word for something without looking into it yourself. What evidence has convinced an expert like you? Why do you believe what you believe?

Smokescreen 10: You're not qualified to question auras/ESP/psi/dowsing/Tarot/astrology!

Response: Oh, really? Didn't you just tell the class that *anybody* could do or develop these skills? If I can learn to do it, why can't I investigate it? What exactly are the qualifications here? ■

Part II will appear in the next issue.

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Satanic Cult 'Survivor' Stories

JEFFREY S. VICTOR

This is the fourth in our series of articles on satanic-cult stories. The previous articles: "Police Pursuit of Satanic Crime," by Robert D. Hicks, Spring 1990; "The Spread of Satanic-Cult Rumors," by Jeffrey S. Victor, Spring 1990; and "Police Pursuit of Satanic Crime, II: The Satanic Conspiracy and Urban Legends," by Robert D. Hicks, Summer 1990.—EDITOR

The testimonials of self-proclaimed "survivors" and witnesses have been used throughout the centuries to lend credibility to subversion myths. In American society, for example, during the height of the anti-Catholic hysteria in the 1830s and 1840s, a number of books were written by women claiming to be former nuns who had "escaped" from forced confinement in convents, where they had witnessed sexual orgies, sadistic torture, the slaughter of newborn infants, and the practice of witchcraft. These pieces of anti-Catholic propaganda were so popular that several hundred thousand copies were sold to a believing public.

The oldest known satanic-cult "survivor" testimonial was published in the book *Michelle Remembers* (Smith and Pazder 1980). It first appeared in 1980 and sold so well that it was later reprinted in paperback by Simon & Schuster. The book was written by a Canadian psychiatrist, Lawrence Pazder, from a case study of one of his patients, Michelle Smith, who suffered from multiple personality disorder. In treating Michelle, Pazder used rather unconventional therapy. In one session, for example, Michelle was baptized a Catholic by a priest. Pazder, a Catholic, later divorced his wife and married Michelle.

Many psychotherapists have been credulously accepting and promoting the satanic-cult legend.

According to Michelle's story, she was sexually abused and tortured during 1954 and 1955 as a child in Victoria, British Columbia, by a secret group of Satanists to which her parents belonged. She claims that she witnessed babies and adults being ritually killed and butchered and that she was once fed ashes from the burned remains of a victim. On another occasion, Michelle claims, a fetus was sliced in half in front of her and then rubbed on her body. She says that she was frequently kept naked in a special cage that was sometimes filled with snakes. On one occasion, she was tied up and a mass of little red spiders were allowed to crawl on her and bite her. On another occasion, horns and a tail were surgically sewn onto her flesh, but she ripped them out. The culmination of Michelle's torture came when Satan himself visited the rituals, but she was saved by the intercession of the Virgin Mary and Jesus.

No external evidence exists to corroborate Pazder's account of Michelle's bizarre tale. Her claims of encountering supernatural beings should provoke at least some cautious skepticism about the whole story. Nevertheless, the book is cited by some psychotherapists as evidence of satanic-cult ritual abuse.

By the mid-1980s, an increasing number of psychiatric patients were being diagnosed as having multiple personality disorder; and many of them were reporting satanic-cult stories to their psychotherapists, many of whom came to believe them.

The Psychiatric Communication Network

The main agency disseminating the satanic-cult legend to the psychiatric profession is the International Society for the Study of Multiple Personality and Dissociation, which sponsors national and regional conferences on multiple personality disorder (MPD). These conferences regularly include workshops and symposiums on satanic-cult ritual abuse. Most of the papers from these conferences are not published. When distributed to those who attend, they are usually marked "not for distribution or reproduction." Therefore, they are not easily available for scientific examination and criticism. Nevertheless, some of these unpublished papers are copied and find their way into the hands of police Satan-hunters. I obtained one such paper, for example, from a policeman who had attended a police training seminar on satanic-cult crime.

"These psychiatrists, psychologists, and social workers came to accept the satanic-cult stories through essentially the same group conformity process that prompts people in a community to accept satanic-cult rumor stories and 'see' things that don't exist."

Therapists who believe the "survivor" stories point to the following forms of "evidence" for ritual abuse of children by organized satanic cults: (1) Their patients' stories are internally consistent. (2) Their patients tell their stories with evident emotional pain. (3) Their patients reveal the same stories while under hypnosis. (4) Patients from various parts of the country report very similar stories.

The same forms of "evidence" have been used by psychiatrists in the past who claimed to have discovered MPD patients around the world who were

able to report stories of their past lives in which they died painful deaths centuries ago. This kind of evidence is also similar to that used to support reports of people being abducted by aliens in UFOs. It is possible that some people have been reincarnated, that some people have been abducted by aliens, and that some people have been ritually tortured and killed by organized satanic cults. However, claims like these must be supported by the kind of evidence that is capable of verification by careful examination and that can be used to rule out alternative interpretations of the testimonies. These same forms of "evidence," for example, are what may be expected to be found in the transmission of a contemporary legend.

The burden of proof should always be upon conspiracy theorists to provide corroborating evidence. Otherwise, fear and suspicion becomes a substitute for rational evidence. Sherrill Mulhern, an anthropologist, recently completed a two-year study in which she interviewed a sample of the most prominent MPD psychotherapists, MPD satanic-cult "survivors," and police Satan-hunters. Mulhern came to the conclusion that the key factor in the acceptance of satanic-cult "survivor" stories is the predisposition of psychotherapists to accept them in response to group pressures.

> Preliminary findings underscored the paramount importance of training seminars for the "conversion" of perplexed therapists into "believers." These conferences were organized ostensibly to educate therapists and CPS [child protection service] workers in the dangers of ritual abuse. A careful review of the most popular facilities revealed that *believing in the phenomena was the principle unifying criteria.* Some of the most respected specialists in child sexual abuse presented alongside cult "experts" whose erudition was illuminated essentially by their fervent Christian religious beliefs and adult "survivors" who "recalled" early childhood cult tortures during therapy, generally for multiple personality disorder. The memories of the survivors were consistently offered in lieu of proof of the existence of elusive cults. (Mulhern 1990)

The Social Process of Groupthink

How did these very well educated professionals come to accept the satanic-cult stories of their patients? I would like to suggest the hypothesis that these psychiatrists, psychologists, and social workers came to accept the satanic cult stories through essentially the same group conformity process that prompts people in a community to accept satanic-cult rumor stories and "see" things that don't exist. This process has been termed "groupthink" by social psychologist Irving Janis (1972).

The social process of groupthink is a collective response to conformity pressures operating within communication networks and groups that are somewhat closed to the influence of alternative beliefs from sources external to those networks and groups. Groupthink can be seen to operate in religious groups, therapy groups, and even corporate bureaucracies, in which the need to maintain cooperative interaction between members creates a pressure to conform. These in turn suppress questioning, skepticism, and dispute about prevailing beliefs. The desire of participants to preserve friendly relationships among themselves inhibits their expressing points of view that deviate from informally accepted group norms. Participants who attempt to bring issues that might cause internal

bickering and conflict are subtly chastised for their disloyalty, or they are ostracized. The process works upon individual perceptions of reality. Members who might privately consider some beliefs unacceptable begin to doubt their own thinking and change their beliefs to fit into the reality constructed by the group. As a result of groupthink, critical thinking and reality testing are repressed by the pressures for group solidarity. The process of groupthink is by no means unusual or rare. Many of us have been members of groups in which this process operates.

According to this hypothesis, MPD psychotherapists are faced with an ambiguous problem in need of explanation. There is no clear understanding of the nature and causes of multiple personality disorder. Even its existence as a distinct and specific mental disorder is a matter of serious dispute (Fahy 1988). It is frustrating for therapists to try to help people in evident emotional pain without an adequate explanation for their distress. The satanic-cult legend is, in a sense, a substitute for "hard news"—a decisive discovery of a cause for the ambiguous symptoms of multiple personality disorder.

The interaction of psychotherapists and their MPD patients is symbiotic in the sense that both need each other to explain ambiguity. The satanic-cult "survivor" stories offer both of them an explanation for the experience of multiple personality disorder. There is good evidence that MPD patients have a chameleonlike, manipulative personality and feed therapists the kind of stories they feel therapists want to hear (Fahy 1988).

Bizarre satanic-cult stories are easily pieced together by MPD patients. They get them from sources in traditional rural folklore about black magic, witches, and devil worship; from newspaper articles reporting satanic-cult rumor stories; from popular culture entertainments like tabloid newspapers and horror movies; and, of course, from the speeches and books of other self-proclaimed "survivors." This accounts for the similarities in stories by patients who don't know one another and may even live in different societies. It is through the psychiatric network that the satanic-cult legend is now being disseminated in England and Holland.

"MPD patients have a chameleonlike, manipulative personality and feed therapists the kind of stories they feel therapists want to hear."

The "survivor" stories were first given credibility when leading MPD psychiatric authorities professed belief in their plausibility. This happened at the first national conference of the International Society for the Study of Multiple Personality Disorder, in 1984. Once authority figures lent credibility to the stories, the process of consensual validation, operating through the psychiatric communicaton network, reinforced the credibility of the stories. In this network, normally open and public scientific criticism and dispute is discouraged. The rationale is to protect the "survivors" from the supposed dangers of the satanic-cult conspiracy. As a result, this communication network operates like a closed community of "believers"; paradoxically, much like a religious cult.

Psychotherapists in the network now accept the satanic-cult stories on

the basis of "faith" alone. Traditional religious therapists, in particular, have an ideological receptivity to the satanic-cult stories and become committed to their dissemination. Because of their ideological preconceptions, they are unlikely to regard the stories with cautious professional skepticism, especially in the face of group conformity pressure from colleagues. The "survivor" stories have now attained the status of taken-for-granted "reality" in the MPD psychiatric communication network.

Many psychotherapists have been articulating the satanic-cult legend in great detail for several years without publishing any empirical research findings in juried scientific journals where they can be subjected to public cross-examination. These therapists' ongoing articulation of the satanic-cult legend, embodying concepts such as cult "brainwashing" techniques, conditioning, symbolic "cues" for subconscious responses, and conspiratorial organization, now functions as an elaborate substitute for a genuine scientific theory based upon verifiable empirical data.

A Psychiatric Seminar About Satanic Cult "Survivors"

The following is a participant observation study of the transmission of the satanic-cult legend at a psychiatric seminar. The six-hour seminar was titled "Culture, Cults and Psychotherapy: Exploring Satanic and Other Cult Behavior." It was sponsored by the Harding Hospital, of Worthington, Ohio, a suburb of Columbus, and took place in March 1990. The main speakers were Maribeth Kaye, a social worker, and Lawrence Kline, a clinical psychologist. They each presented "information" about satanic cults and the ritual torture of children. The structure of the seminar did not allow the audience to critically cross-examine speakers or to engage in dialogue with them. Questions from members of the large audience had to be submitted in writing, and the speakers responded to some of them at the end of each session.

Kaye and Kline presented an elaborate description of Satanism and satanic-cult activity, including their ancient origin, the use of torture and sexual abuse of children to "brainwash" them, the use of secret symbolic cues to trigger programmed behavior in members, the recruitment of members, the levels of membership, and their political-ideological goals. I have only space for a brief summary.

According to Kline and Kaye, organized satanic cults have existed as a secret "countercultural religion" since ancient times. Supposedly, membership is transmitted primarily through families. Sexual child abuse and torture is deliberately employed by Satanist families as a technique to brainwash and program children to confuse evil with virtue so that they will follow instructions to commit satanic evil acts without feeling guilt. However, Satanists also attempt to recruit members by getting young people involved in occult, black magic practices. They contend that through a process of increasing involvement and manipulated commitment, Satanists gradually assimilate recruits into deeper circles of this secret society. By this means, teenage "dabblers" in black magic are recruited into more secretive witchcraft cults, from which even more secretive "hard-core" satanic conspirators are recruited—usually only after proving themselves by arbitrarily murdering some stranger. "Hard-core" Satanists, they say, are involved in a variety of nefarious criminal activities, such as child pornography, "snuff porn," and the international drug trade. An inter-

national network of very secretive, "hard-core" satanic cults are linked together in pursuit of satanic ideological goals. These secret Satanists try to infiltrate the higher levels of the power structure in all societies in order to undermine the moral order. The ultimate goal of the satanic conspiracy is to create international chaos in order to allow Satan to take over the world.

The main source of evidence cited by Kaye and Kline for all of this elaborate description was the testimony of MPD patients. When Kline was asked, in a written question, to cite some external corroborating evidence for a satanic-cult conspiracy, he candidly admitted that there was none and said all the evidence is "circumstantial." He referred to the pop-culture satanic-cult-crime books as useful sources of information. Then he asked members of the audience to raise their hands if they had encountered cases of "ritual abuse" in their practices (without defining what he meant by the term). About two-thirds of the audience raised their hands. There was no further discussion of the issue. (This is an obvious group conformity pressure technique.)

In one of her presentations, Kaye offered many photographic slides of drawings made by MPD patients as evidence of satanic influences, supposedly in the symbolism she interpreted from the drawings. She also offered slides of odd paraphernalia that she claimed was satanic, black magic artifacts, and symbolic cues used to trigger programmed behavior from MPD sufferers. At one point, Kaye referred to the film *The Manchurian Candidate* as "an excellent example of how mind-control operates." In a written question, Kaye was asked if she had any external corroborating evidence to verify the satanic-cult stories of her MPD patients. She responded, "A good therapist can tell whether or not a client is truthful by the internal consistency of what the client says." She also noted that, since the relatives of the patients are involved in a criminal conspiracy, they would be expected to deny the stories told by the people they victimize.

I was interested in how these stories were being received by the audience and asked the people sitting on each side of me about their reactions. They told me that what they heard was difficult for them to believe and that they would like to see some hard evidence. However, during a conversation at lunchtime, I found quite a different reaction. A psychiatric nurse who worked at Harding Hospital was seated beside me. I asked her if she believed what the presenters had reported about satanic cults, including the idea of an international network of criminal Satanists? She responded, "Definitely!"

I then asked her how she could be so certain that Kaye's and Kline's presentations were true. What she told me reveals the crux of the whole satanic-cult phenomenon (Victor 1989). She quite candidly said that the existence of Satanism confirms her belief in God.

Being a bit mystified by this response, I asked, "Why?"

She said: "Anyone who is a Christian and believes in God must also believe in the existence of Satan. Satanists believe in Satan and work for him, just like people who believe in God work for God. So I know that God and goodness really exist."

At the closing of the conference, audience members could participate in small group "debriefing sessions" with staff members of Harding Hospital. The discussion group I joined included Ellen Mosley, a psychiatrist, and her psychiatric intern from Harding Hospital. It also included two mothers

concerned about Satanism among teenagers in their town, because one of them had a son who was "taken" by Satan and Satanism. When we were asked about our reactions to the presentation, I cited the need for hard evidence to confirm the stories about satanic cults. Dr. Mosley told me she treats many MPD patients and believes their stories. I would also, she said, if I saw the evidence right in front of me. She was referring to her patients' evident emotional pain upon recalling what happened to them. She said that the internal consistency of their stories proves that they are true. When I pressed her for external corroborating evidence of a satanic-cult conspiracy, she referred to the Bible and said, "Isn't that good enough?" Her psychiatric intern, a psychologist, told the group that she believed that MPD patients "were possessed by the Devil and only exorcism could really help them."

I was amazed to hear this conspiratorial world-view being presented at a conference sponsored by a psychiatric hospital, one that offers graduate credit toward instruction in psychotherapy. There were 370 people in attendance. The participants included 93 social workers with master's degrees, 72 nurses, 50 psychiatrists, 40 psychologists with Ph.D.s, and 70 clergymen and counselors. Continuing education credit was offered to psychologists who attended, via the American Psychological Association. The fee for the seminar was $70. It seems to me that the issue of possible educational and financial impropriety needs to be addressed by professional associations when educational credit is awarded for attendance at such conferences. They have become a growth industry.

Finally, there is another matter of serious practical concern. If the stories of these "victims" are given credibility, what will happen to the innocent people they accuse of being part of a satanic-cult conspiracy?

References

Fahy, Thomas A. 1988. The diagnosis of multiple personality disorder: A critical review. *British Journal of Psychiatry,* 153:597-606.

Janis, Irving L. 1972. *Victims of Groupthink.* Boston: Houghton Mifflin.

Kaye, Maribeth, and Lawrence Kline. 1987. Clinical indicators of satanic cult victimization. Unpublished paper presented at the Fourth International Conference on Multiple Personality/Dissociation. Chicago, Ill., October.

Mulhern, Sherrill. 1990. Ritual abuse: Defining a syndrome versus defending a belief. Abstract of an unpublished paper presented at the International Congress on Child Abuse and Neglect. Hamburg, Federal Republic of Germany, September.

Smith, Michelle, and Lawrence Pazder. 1980. *Michelle Remembers.* New York: Congdon and Lattes. Republished in 1989 by Pocket Books Division of Simon & Schuster.

Victor, Jeffrey S. 1989. A rumor-panic about a dangerous satanic cult in Western New York. *New York Folklore,* 15, nos. 1-2 (Winter-Spring): 23-49.

———. 1990. Satanic cult rumors as contemporary legend. Special Issue: "Contemporary Legends in Emergence," *Western Folklore.* Spring-Summer.

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'Old-Solved Mysteries': The Kecksburg Incident

ROBERT R. YOUNG

Original reports and eyewitnesses suggest the crashed UFO tale recently featured on TV's 'Unsolved Mysteries' is a hoax.

On September 19, 1990, the NBC television network's season opener of "Unsolved Mysteries" featured a half-hour segment on the heretofore little-known "Kecksburg UFO Crash." It was alleged that this involved the crash and recovery by the U.S. military of an unidentified flying object with strange alien markings in the small western Pennsylvania town of Kecksburg, near Pittsburgh, on December 9, 1965.

The program was the tenth most watched in America in a week that saw the introduction of the season's "new" shows. It was viewed in an estimated 17.7 percent of households with television, and on 30 percent of all television sets turned on (*Broadcasting* 1990). Recent surveys for the National Science Foundation report that 2 in 5 adult Americans believe that alien spaceships account for some UFO reports (*Science News* 1986). It therefore seems likely that several million viewers may have been predisposed to accept the premise of the program.

This "saucer crash" has not been widely known to UFOlogists or UFO skeptics because it appears never to have happened. According to a review of all original published accounts, the sole witnesses to the saucer crash apparently were two eight-year-old children who were among thousands in nine states and Canada to view a bolide (brilliant) meteor (Gatty 1965).

Add to this a gullible local flying-saucer buff who has finally found "his own" thrilling flying-saucer crash to investigate; the U.S. Air Force

"Project Blue Book" UFO investigating office; "unnamed Pentagon sources"; a secret military satellite launch; the Pennsylvania State Police; the Kecksburg volunteer fire company; local news reporters who were at first kept away; the 24-year-old recollections of local citizens; and the recent materialization of "new" witnesses.

According to a front-page story in the nearby Greensburg, Pennsylvania, *Tribune-Review* the day after the TV show, some Kecksburg residents, including many observers of the 1965 event and even some portrayed in the program, say it is all a hoax. Some residents blame two local men whose story of a copper-colored 12′ by 7′ "acorn-shaped" object with "hieroglyphic" markings had surfaced only a couple of months earlier—almost a quarter-century after the original publicity.

Tribune-Review staff writer David Darby (1990) reported that more than 50 Kecksburg residents sent a petition to the program's producers in an attempt to stop its airing. The paper reported that these nonbelievers included Ed Myers, the Kecksburg fire chief in 1965, who was portrayed by an actor on the program; Jerome and Valerie Miller, whose home was portrayed as the site of a "military command post" during UFO recovery operations; the owners of the land where the saucer was supposed to have landed; and Kecksburg firemen.

Myers expressed concern. "It's killing me to know this is going nationwide, because there's absolutely no truth to it," he told Darby. "Something's gonna be put in the history books for my grandchildren to read, and it is just not true."

The Millers, the paper reported, deny that their home was a center of military activity. Darby said "whoops of laughter" filled the Miller living room when a group of residents who consider the whole thing a hoax gathered to watch the melodramatic program.

Several elements combined in 1965 to create local hysteria. For several days the world had been fascinated by front-page coverage of the missions of Gemini 6 and 7, two U.S. spacecraft set for a manned joining. The day of the incident (December 9) the *Pittsburgh Press*, widely read in the Kecksburg area, reported that Frank Edwards, a nationally known flying-saucer lecturer and broadcaster had arrived in the city to speak. The headline, "Lift UFO Secrecy, Saucer Believer Says," had a "kicker" above it, "U.S. Hush-Up Charged."

However, the *Erie Daily Times* (December 10) reported another event that day that went largely unnoticed: a secret satellite was launched from Vandenberg Air Force Base, California, a launchsite for military polar-orbiting reconnaissance missions. The stage was set.

Shortly after 4:40 P.M. (EST) a brilliant bolide, or "fireball," was seen by thousands in Idaho, Illinois, Indiana, Michigan, New York, Ohio, Pennsylvania, Virginia, West Virginia, and Ontario, Canada, according to reports on December 10 in the *Erie Daily Times;* the *Pittsburgh Press*, the *New York Times*, and the *Pittsburgh Post-Gazette*. The fireball was even said to have been seen in California (*Pittsburgh Press*, Dec. 10, 1965). Astronomers from Michigan, Ohio, and Pennsylvania, who had received many reports, concluded the object had been a bright meteor (*Erie Daily Times, Pittsburgh Press, New York Times, Pittsburgh Post-Gazette*, Dec. 10). This was also the conclusion of the Federal Aviation Administration, according to a spokesman at Erie, Pennsylvania (*Erie Daily Times; Pittsburgh Post-Gazette*); Air Force spokesmen in Washington; and unnamed

"Pentagon sources" (*Pittsburgh Press, New York Times*).

Reports of bolides are typically inaccurate. Astronomer Frank Drake (1972), after efforts to recover meteorites from fireball reports, has estimated the fraction of eyewitnesses who are wrong about something to be 1 out of 2 after one day, 3 out of 4 after two days, and 9 out of 10 after four days. Witnesses often grossly underestimate the distance of fireballs, which may be dozens of miles high. When the meteors disappear over the horizon it is sometimes taken as a "nearby" event (Klass 1974:42-49).

The 1965 fireball was no exception. It was reported to have "crashed" or "landed" in six widely separated locations. A pilot in the air reported watching as it "plummeted" into Lake Erie (*Pittsburgh Press*, Dec. 10). At Midland, Pennsylvania, west of Pittsburgh, falling debris was reported but police found nothing (*Erie Daily Times, Pittsburgh Press*, Dec. 10). At Elyria, Ohio, west of Cleveland, a woman reported that a fireball the size of a "volley ball" fell into a wooded lot. Firemen reported 10 small grass fires but no flying saucer (*Pittsburgh Post-Gazette*, Dec. 10).

At Lapeer, Michigan, 40 miles north of Detroit, sheriff's officers investigating the report of "a ball of fire crashing" found only pieces of tinfoil (*Pittsburgh Press*, Dec. 10). The most spectacular report came from Detroit and Windsor, Ontario, where pilots, weather observers, and U.S. Coast Guard personnel reported that a flying object "exploded" over Detroit. Coast Guard boats sent into Lake St. Clair found nothing (*Tribune-Review*, County Edition, Dec. 10). The Air Force UFO investigating office at Wright-Patterson Air Force Base, Ohio, may have been interested in the recovery of space-launch debris and sent three-man investigating teams from the 662 Radar Squadron, based near Pittsburgh, to Kecksburg and Erie (*Erie Daily Times, Pittsburgh Post-Gazette*).

In Kecksburg the scene had turned into a circus. Little Nevin Kalp had run and told his mother, Mrs. Arnold Kalp of RD 1, Acme, Pennsylvania, that he had seen something "like a star on fire." Going outside she saw "blue smoke" that seemed to come from a nearby woods (Gatty 1965; *Pittsburgh Press*, Dec. 10). Other reports had described a bright trail left in the air by the meteor (*Pittsburgh Post-Gazette*, Dec. 10). A "thump" whose vibration felt by one witness was attributed to dynamiting at a local quarry or to a shock wave heard by many western Pennsylvanians who witnessed the fireball. Mrs. Kalp called a local radio station that had been reporting a plane crash. Soon, according to the *Tribune-Review*, a "massive traffic jam" had engulfed the small town (Gatty, *Tribune-Review*, City Edition, Dec. 10, Dec. 11).

A local volunteer fire policeman informed reporters that the Army and the state police had told them not to let anybody in (Gatty 1965). One result was that an early edition of the Greensburg paper carried a seven-column banner headline atop page one, " 'Unidentified Flying Object' Falls Near Kecksburg," and, "Army ropes off area" (*Greensburg Tribune-Review*, County Edition, Dec. 10).

Captain Joseph Dussia, commander of the Pennsylvania State Police Troop A Headquarters at Greensburg, announced the next day that after an all-night search "absolutely nothing had been found." Reports of something being carried from the area referred only to equipment used in the search, Dussia said. He added, "Someone made a mountain out of a molehill" (*Greensburg Tribune-Review*, City

Edition, Dec. 10). The Air Force also announced that nothing had been found (*Pittsburgh Press*, Dec. 10). The next day a *Greensburg Tribune-Review* editorial summarized its staff's independent investigation: Nothing at all seems to have happened (Dec. 11). The official explanations are totally consistent with all published accounts and the present recollections of scores of witnesses.

When does the "unsolved mystery" come in? Now enters Stan Gordon, founder of the Pennsylvania Association for the Study of the Unexplained (PASU), a Greensburg-based group that collects sightings of UFOs, Bigfoot, and other oddities, such as the "Eastern Cougar," an animal that has been extinct for a hundred years. PASU seems to do little research into these events but does issue press releases. Gordon, a 30-year veteran of saucer chases, is also Pennsylvania director of the Mutual UFO Network (MUFON), the nation's largest surviving flying-saucer group.

Each year in early January PASU issues its annual press release to Pennsylvania newspapers listing exciting reports received during the previous year. Their 1989 release featured an alleged UFO encounter by a Harrisburg, Pennsylvania, policeman (*Latrobe Bulletin*, Jan. 9, 1989). A PASU investigator later said the witness had suffered "severe burns" and a "severe eye injury." MUFON's state director soon turned it into a "returning UFO abductee" encounter, making claims publicly denied by the witness. Local amateur astronomers found the witness had been looking at the planet Venus. The witness refused to be examined by a physician; a PASU investigator "lost" film evidence of the witness' injuries, and a substance Gordon had tested at a laboratory and then described as "strange" and "unusual" turned out to be a common fertilizer (Young 1989).

In 1990 PASU issued a call for anyone with knowledge of the Kecksburg UFO crash to come forward (*Latrobe Bulletin*). With an experienced nose for saucer news, they must have sensed that even after 24 years witnesses always seem to be willing to come forward if the case is exciting.

Actually, the Kecksburg UFO tale has been making the rounds among Pennsylvania saucer buffs for some time. Flying-saucer evangelist Robert D. Barry hosts a Saturday midnight program, "ET Monitor," on WGCB-TV, Red Lion, Pennsylvania, a religious station, where he mixes NASA films, UFOria, viewer calls, and occasional Bible readings. Barry mentioned the Kecksburg recovery in a lecture at Elizabethtown College, Elizabethtown, Pennsylvania, on March 22, 1989, and followed on his April 2, 1989, program with the revelation that the incident involved the recovery of "bodies." Later, on his April 23, 1989, broadcast, he stated that no bodies were involved in the UFO accident.

Barry says that years ago he was told by an unnamed NASA informant that the Kecksburg UFO had been tracked, a claim that is contradicted by statements made by a North American Air Defense Command spokesman at the time (*Erie Daily Times; Pittsburgh Press; Pittsburgh Post-Gazette*, Dec. 10). Barry has also reported, citing Stan Gordon as his source, that a 1965 member of the Kecksburg Fire Company claims it had been contacted by NASA *before* the UFO crashed and asked to keep the public away from the area, a claim contradicted by the original published reports and eyewitness statements (*Tribune-Review*, City Edition, Dec. 10, 1965).

A curious claim, oddly similar to the Kecksburg story, occurred January 28, 1990, on Bob Barry's television program. At 7:10 P.M. (EST) that evening a bright fireball had been seen over much of the East Coast (*Harrisburg Sunday Patriot-News*, Jan. 28, 1990). That night on "ET Monitor" Barry reported that "a Greensburg source," a euphemism he sometimes uses for PASU's Stan Gordon, had called to say that "an object landed" nearby at about 7:20 P.M., that the area had been cordoned off, and that the source was "trying to get as close as he could." A well-known baseball philosopher would have been prompted to say that it seemed like "déjà vu all over again."

It is too bad the producers and researchers at "Unsolved Mysteries" didn't scratch around a little. At least 50 folks at Kecksburg could have saved them an embarrassment.

References

Broadcasting. 1990. (Cites Nielsen and its own research.) P. 40.

Darby, David. 1990. *Greensburg Tribune-Review* (Greensburg, Pa.), December 10, p. 1.

Drake, Frank. 1972. On the abilities and limitations of witnesses of UFO's and similar phenomena. In *UFO's: A Scientific Debate*, 247-257, eds. Carl Sagan and Thornton Page (New York: Cornell University Press and W. W. Norton).

Gatty, Bob. 1965. Unidentified flying object report touches off probe near Kecksburg. *Greensburg Tribune-Review*, December 10, p. 1.

Klass, Philip J. 1974. *UFOs Explained* (New York: Random House/Vintage), pp. 42-49.

Science News. 1986. 129:118.

Young, Robert R. 1989. "Harrisburg 'UFO Incident' Stimulated by Venus." Unpublished manuscript by the author.

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Penn & Teller, the Magical Iconoclasts

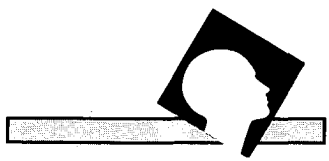
HENRY GORDON

Penn is the big guy who never stops talking. Teller is the little guy who never speaks—in public. Having dinner with this oddly matched duo is not dull. During the two solid hours I spent with them, the big guy consumed only a cup of coffee; the little guy never stopped eating, which probably gave Penn an excuse to ramble on. However, Teller did respond when questioned and made some cogent contributions during our discussion.

This increasingly famous duo were in Toronto to present their wild and wacky magical stage show, "The Refrigerator Tour," at the prestigious Royal Alexandria Theater. Fondly known as the Royal Alex, this house, which usually features legitimate theater and musical blockbusters, probably has never before rocked to anything like the zany antics of Penn and Teller.

I think that the last time a magic show hit the boards of this theater was when Doug Henning performed in the magic extravaganza that led to his appearance on Broadway and then to international fame. But to compare a Henning show with one of Penn and Teller's is like comparing watching paint dry to riding a rollercoaster. No hard feelings, Doug.

Penn Jillette, six feet six and thirty-five years old, has dabbled in juggling, magic, fire-eating, sword-swallowing, and unicycle-riding. His loquaciousness is matched by a sort of worldly wisdom gathered in his varied and seasoned career. Performing as a juggler on the streets of Philadelphia, and then working his way up the ladder of show business, Penn has paid his dues as an entertainer.



This increasingly famous duo are more than wild and wacky stage magicians; they are also staunch defenders of rationality and skepticism.

Penn Jillette and Teller (he's the little guy) on their Refrigerator Tour.

Teller, whose basic training as a conjurer makes him the real magic expert on the team, has subscribed to the magicians' tradition of using only his surname as a performer. He, too, got his baptism in showbiz as a street performer. An accomplished magician while still in high school, he later attended college and then taught Latin for four years. Eventually he made the big switch, to team up with Penn Jillette and begin his show-business career. Seven years older than Penn, according to his partner he does the major share of the planning for their very original presentations.

Apart from my interest in magic, my prime motivation for meeting with and interviewing Penn and Teller was their skeptical outlook regarding the paranormal and their public pronouncements on the subject. On the stage, on radio and television, and in print interviews, Penn Jillette, as the spokesman of the pair, never fails to get in a few well-chosen remarks (broadsides) on the need for skepticism regarding paranormal claims.

It occurs to me that Penn and Teller are powerful allies of all who support the cause of reason and rationality. First, their audience is predominantly young—according to the polls, the very population that seems to swallow too much paranormal poppycock. When they present the case for skepticism they are bound to change a few minds, and also inspire

a little critical thinking.

Second, the more prominent they become in the field of show business, the more influence their opinions have on the public. Ironically, when I asked Teller what he thought of Shirley MacLaine, he answered: "People who become famous for one thing are suddenly authorities on everything. . . . She's just another example of that." Now this is not to say that Penn and Teller consider themselves authorities on the paranormal. When I asked Penn what he thought of UFO claims, he said, "Everything I know about UFOs I learned from the pages of the SKEPTICAL INQUIRER."

But when you consider that Shirley MacLaine's New Age exploits have attracted such an immense following because of her prominence in the entertainment field, I have no compunctions about Penn and Teller playing on the skeptics' team.

Penn, incidentally, likes to make it clear that they do not pretend to speak for CSICOP or other skeptical organizations. Their public image, he seems to think, doesn't qualify them as quite dignified enough for that. "It's important we stay as loose cannons," says the big guy.

On the subject of MacLaine, Penn is a bit more forceful than Teller, calling her a "credulous nitwit." "[She] is someone who is too rich, has too much time on her hands, and is not too smart. . . . With pseudoscience you can pretend to be talking about science. . . . Once you begin to buy into the first few premises it's all very easy after that," said Penn.

Teller has some strong opinions about the recent spate of books about UFO abductions: "It seems to me that when people are not good enough in the arts to make it on the strength of their ability, sometimes they slide over into apparent reporting, and this is a big problem. If you're not a good enough novelist to write a novel about UFOs it seems to be very advantageous to claim that what you are doing is in some way real information."

Penn Jillette has some pet peeves about skeptics who avoid getting into controversies about pseudoscience and the paranormal and will not stand up for the skeptical side. He tells of gatherings he has attended where purveyors of psychic claims and New Age thinking lay down the "party line" and "many people who are clear-thinking . . . nod and smile and leave the room" without comment.

Of course it was a problem for a long time that men and women of science avoided getting engulfed in the morass of the occult—until many of them endorsed the strong statement condemning astrology, the statement that led to the establishment of the Committee for the Scientific Investigation of Claims of the Paranormal in 1976.

At my lectures and on television talk-show appearances I am often asked "What is channeling?" Penn Jillette came up with the most succinct definition I have yet heard, and I confess I intend to borrow it—with a bow to Penn, of course: "Channeling is just bad ventriloquism. You use another voice, but people can see your lips moving."

When three magicians get together, even though they are fellow skeptics, there's no avoiding the subject of magic. Readers would be short-changed if I did not refer to some of Penn and Teller's thoughts on magic and on magicians in general.

There's no question that these two entertainers have aroused the ire of many conjurers, particularly that of amateur magicians, because they have been known to expose some of magic's closely guarded secrets—and because of their attitude toward many of these amateurs. For example, when Penn is

asked why people take up the practice of magic, he answers, "They would like to have something over other people." This is a condemnation that certainly does not apply to all magicians, amateur or professional.

And the onstage revelation by Penn and Teller of some magic methods might raise the question: How would they feel if there was a public exposure of some of the more serious magical effects that Teller performs in their show, such as the very effective needle-swallowing trick initially made famous by Houdini? Penn claims that this has already been publicly exposed, and that it doesn't bother him. Perhaps he is right. People who are interested can walk into any bookstore or library and leaf through many volumes chock-full of explanations of the methods used by magicians. The point is, I suppose, that for Penn and Teller's show it works, and that's the bottom line—and a casual exposure is usually soon forgotten.

They do have a rationale for their exposures—and Teller is quite explicit on the subject. He feels that if someone performs a card trick, for example, and then tells how it is done, that teaches the public something about magical thinking and the trickery that can deceive people.

My only question on that score is: Where do you draw the line? Which secrets, and how many, can you give away without undermining the structure of a conjuring presentation, which, let's face it, is based on the principle of secrecy. Penn and Teller seem to keep these revelations within reasonable bounds. Others might be less circumspect.

The stage show itself, The Refrigerator Tour, is worth experiencing. Why the title? Well, the opening scene shows two human figures, Penn and Teller, writhing under a large sheet on top of a platform. Suspended over the pair is a huge refrigerator, held up by two heavy ropes. Four hands emerge through openings in the sheet, and perform a quick trick with a couple of handkerchiefs. Then, suddenly, the ropes are released and the refrigerator drops with a crash, in a cloud of dust, on the figures below. There's a hush in the audience. Then Penn and Teller emerge unscathed. This sets the theme for the rest of the show, which proceeds at a furious and frenetic pace.

One of the wackiest effects they perform is a simple "card trick." A card is selected by a member of the audience and then shuffled back into the deck, and the cards are then spread out, face down, on a tabletop. Teller stands behind the table, brandishing a wicked-looking dagger. Penn asks him to stab through a card. He does so, then shows the card impaled on the dagger. Is it the chosen card, asks Penn? No, it isn't. Teller then furiously stabs card after card. No luck.

As Penn is talking he has one hand resting on one of the cards. Teller, with a fiendish grin, stabs right through Penn's hand! Penn raises his hand, screaming in pain, and yelling out obscenities. There is the dagger, penetrating his hand, with the card impaled on it. Blood is pouring down his arm. The kicker is this: Penn finally interrupts his invective to yell out to the audience "Is *this* your card?" It is.

You might say this is doing magic the hard way.

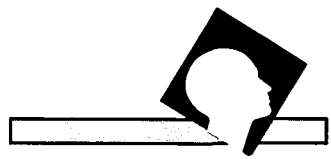
Penn and Teller are excellent showmen who despite their zany theatrical antics are serious people. Their opinions on rational thinking are well worth considering, particularly when, using the term New Age, they pronounce it as *newage*—rhyming with sewage.

Henry Gordon is a Toronto-based magician, writer, lecturer, and broadcaster.

Magic, Medicine and Metaphysics in Nigeria

WOLF RODER

Throughout Africa the rhinoceros is being hunted to extinction because its ground horn is believed to restore potency to old men. Also, the belief in witchcraft and traditional medicine flourishes despite modern medicine and Western education, which, as a standard development text puts it, "releases people from the bonds of superstition, enabling them to act rationally rather than traditionally. . . ." (Barnett 1989:138). In fact, formal education and medicine have had very little influence on the firm belief that all illnesses and other misfortunes are caused by witchcraft perpetrated by evil persons and that only magical traditional medicines can defend the individual against disaster.[1]



In African society belief in witchcraft and its remedies is extraordinarily widespread and persistent. There is a rich continuum and a thorough mixture of ideas from Christianity, Islam, and traditional African beliefs.

Modern biochemical medicine is well received and widely used by all sections of society. Health services for Africans were introduced by Christian missionaries during the colonial period, and until independence most hospitals were run by missionaries. Today many doctors trained in countries of European culture are joined by medical experts educated at the university teaching hospitals founded in Africa since independence. In Nigeria such doctors in private practice are the preferred providers because of their superior access to imported medicines and drugs. Unfortunately many people can still not afford their services or, in remote rural areas, find them inaccessible.

The person who consults a Western M.D. will also consult a traditional healer, who may be referred to as a "witchdoctor" or "herbalist" (*babalawo* in Yoruba, *boka* in Hausa). The focus of such consultation is not the physical disease

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Roadside sign for herbalist on main road into New Bussa, a town of 40,000 inhabitants near the Kainji Dam across the Niger.

but an attempt to find out why the person fell ill. The concept is that an enemy, i.e., a witch, because of envy or malice or as the result of a real or fancied slight, has used sorcery to cause the illness. The witchdoctor—the healer who defends against witches—will find the culprit by various methods of divination and will take countermeasures. These can take many forms, of which an herbal concoction is only one. At his best, the healer may help reach a compromise and settle a rift or dispute between two antagonists.

The role of the witchdoctor, diviner, traditional healer, or herbalist is clearly different from that of the medical doctor. The witchdoctor is dealing with metaphysical issues beyond the ken of biology, chemistry, or reason. To call traditional medicine an alternative form of health care, as some social scientists have done in an attempt to be fair-minded, seems to miss the point. The witchdoctor's role is akin to that of a priest or a pastor who prays with patients in Western hospitals.

To call such practitioners herbalists also seems mistaken, for many courses of action other than herbs are used. The term appears to have arisen shortly after the beginning of the colonial period at the turn of the last century. In precolonial times, witch-finding often led to persecution, trial by ordeal, execution, and other forms of violence, and sometimes to protracted disputes dividing communities. Colonial authorities outlawed the practice of witch-finding, to the dismay of Africans who felt themselves helplessly confronting the forces of

evil. Thus, the milder forms of witchdoctoring were allowed to reappear or persist in the name of herbal native medicine. That the efficacy of the concoction is not in the herbs themselves has been shown by scientific investigation. Biologists and chemists who have tried to examine traditional herbal remedies have found it exceedingly difficult to find consistency of prescription not only between practitioners but in cases treated by the same traditional healer. Besides, the witchdoctor may tell the inquirer quite openly that the effect is not in the drink but in the incantation.

This is not to say that some remedies may not have a physical effect. Ceslaus Prazan (1977) describes two about which he found widespread independent agreement among the Duka people regarding their preparation and use. Hot vapor of an infusion of the bark of the *hano* tree (*Boswellia dalzieli*) inhaled under a cloth hood was prescribed for headache. He also reported that ground root of the *gwandar daji* tree (*Anona senegalensis*) mixed into food would help common stomach ills. For many other herbals he found little or no agreement even within the small community he studied.

A remedy against sorcery may take many forms. A potion or powder may contain mineral, vegetable, or animal matter, with the ash of various things featured prominently. The concoction may be ingested or infused into the body through an incision. Other means of using the witchdoctor's product might involve burying it in a designated place at a specific time with a prescribed ritual. It may require sprinkling it in the livingroom or bedroom or even the office of the victim or the putative enemy witch. It may have to be used in the bath water, or as a soap. It may even be a treated commercial soap. The remedy may have to be worn as a ring, bracelet, or amulet. Sacrificial animals are widely prescribed, e.g., chickens, goats, or sheep with blood or body parts becoming part of the remedy or ritual. Finally, the making of most remedies involves ritual incantations, and these alone may be recommended in some cases.

Among Muslims in Nigeria a potion made from the ink with which appropriate verses from the Koran have been written is widely accepted as good for many problems. The ink is soluble, and the Koranic verses are brushed onto a smooth board and washed off; then the water is taken internally. No local village market would be complete without its booth of learned *malamai* (Koranic teachers; singular, *malam*) to deal with problems brought to them.

The use of witchdoctors is by no means confined to cases of physical illness. For the achievement of all sorts of desirable ends the use of the supernatural powers of witchcraft appears necessary. Farmers use these methods to ensure good crops, to defend their harvests against vermin, or to promote the multiplication of stock. Fishermen use them to attract fish into their nets, or to identify persons they believe can turn themselves into marauding crocodiles. Hunters use charms to make themselves invisible to game. In married love and in dalliance or to ensure fertility the right traditional medicine is indispensable. Nor is this kind of sorcery confined to the traditional sector of life and the economy. To gain promotion in the workplace or at school, to win a court case, to secure an appointment, or to assure success in a business venture requires medicine. No candidate would enter a civil service or university examination without the necessary charm. Sports teams have their official witchdoctors.

Traditional African concepts usually recognized an ultimate god in control of the universe, whom the missionaries could reinterpret to their own view. More recent African religious traditions revolved around the souls or spirits of each person's ancestors, who were understood to guard and care for their descendants as they had in life. With the coming of a broader national society and the mixing of many ethnic groups in cities, the particular ancestor-divinities of the village needed to be subordinated to a more universalistic faith. The missions of the conquerors supplied one such faith; in the northern parts of Nigeria, Islam represents another. What the missions failed to instill was an understanding and respect for rationality, science, and logic.

While it is difficult to summon ancestors in a strange town far from family and homestead, witchcraft requires the services of a local practitioner who understands the local forces and counter remedies. Witchcraft is a concrete explanation of particular events—death, illness, lack of rain, a car crash. It offers a precise reason that a disaster happened at a particular time and to the particular person together with instructions to combat the evil. A rationalist might explain it as random chance, but to a believer that merely begs the question. Explanations offered by Christian or Muslim are akin to the African understanding of witchcraft. The priest or pastor will preach of the devil and about the evil that lurks in the human heart and that must be cast out. Africans were quick to recognize that the Bible too speaks of witchcraft, sorcery, and evil spirits—did not Jesus himself cast them out? When mainline missionary churches refused to incorporate ideas of witchcraft and spirits directly, Africans founded their own. In Nigeria these include the Brotherhood of Cross and Star, the Celestial Church, and the Church of the Cherubim and Seraphim.

Support for belief in witchcraft and its remedies is extraordinarily widespread and persistent in African societies. This is true even among the elite, who in this context may be thought of as all who have enough income to afford a private car in running condition and have at least a secondary school education (Oyedipe 1979). It is consequently difficult to find anyone who does not subscribe to at least part of this belief system. Healers will be quick to cite testimonials from satisfied customers or point to uncontrolled cases of success. Since the newspapers widely and sensationally report accusations and court cases involving witchcraft, the questioned healer may reach for a magazine or newspaper clipping as evidence of his qualifications. Oyedipe (1979) reports several such experiences. In a society where the judge may be assumed to take the existence of witchcraft for granted, the claim that the whole idea is a gross superstition can be no defense against such an accusation (Ojo 1978).

Persons more familiar with Euro-American culture may point out that Africans do not stand alone. Oyedipe (1980:9) writes: "Africans . . . are not the only people with belief systems and metaphysics." He goes on to cite the White Eagle Lodge, the Rosicrucians, and the Theosophists as examples of belief in spirits in the prestigious Euro-American culture realm, and points out that covens of witchcraft may be found in the West. He appears to be especially impressed with the efficacy of Transcendental Meditation (Oyedipe 1982). Magic shows also help. After all, if a magician can saw a person in half, there must be something to it.

Successful healers are not bound

by rigid convention. They may well couch their findings in medical terminology. They may speak of infection, of parasites entering the body, or of a deficiency in the blood. The examination as well may take on an aura of a medical checkup, with white coat, stethoscope, and all. Some herbalists have taken to dispensing available Western medicines, such as aspirin and antibiotics. It is particularly the latter development that has encouraged social scientists to defend the practice of herbalism. In a society where proper medical care is frequently unavailable or beyond the reach of the poor, it may be held that any treatment is better than none at all.

In the West a distinction is often made between standard, official, or liberal religion, on the one hand, and far-out claims of pseudoscience and the paranormal, on the other. In Nigeria this distinction would be very difficult to make. Christian and Islamic ideas are thoroughly mixed with traditional beliefs in the evil forces of persons both living and dead. There is a rich continuum, from missionary teaching, through independent churches and traditional concepts about the spirits of ancestors, to belief in witches and other evil. To separate religion from superstition would present considerable conceptual obstacles. One would have to take on the entire gamut.

A way of summing up the Nigerian situation is to point out that African society is much closer in time than ours is to its traditional roots. Many paranormal beliefs in our society are shown on examination to have deep roots in folklore and mythology, e.g., the ancient practices of astrology, dowsing, and the expectations of werewolves. Such paranormal ideas have persisted despite rationalism, which has its roots as far back as the Renaissance, unless we wish to trace it back to the ancient Greeks. Rationalistic materialism was introduced to Africa only about a hundred years ago, and then very imperfectly by those least qualified to do so.

Note

1. Almost any anthropological or sociological text reporting field work in Africa will discuss traditional beliefs and witchcraft.

References

Ademuwagun, Z. A., ed. 1979. *African Therapeutic Systems* (Waltham, Mass.: Brandeis University Press). This is an accessible work devoted to the topic.

Barnett, Tony. 1989. *Social and Economic Development: An Introduction* (New York: Guildford Press).

Ojo, J. D. 1978. The place of supernatural powers in the criminal law with particular reference to Nigeria. *Nigerian Behavioral Sciences Journal*, 1.

Oyedipe, Francis P. A. 1979. The ambivalence of the Nigerian elite in metaphysical matters. *Proceedings of the Nigerian Anthropological and Sociological Association, Annual Conference.*

———. 1980. Pointers to verification in metaphysical aspects of traditional healing in the Kainji Lake Basin, Nigeria. Paper presented at the Tenth International Congress of Tropical Medicine and Malaria, Manila (Philippines), November 9-15.

———. 1982. Corruption, personality, and transcendental meditation in Nigeria. Paper presented at the Nigerian Anthropological and Sociological Association, Annual Conference.

Prazan, Ceslaus. 1977. *The Dukkawa of Northwest Nigeria* (Pittsburgh: Duquesne University Press).

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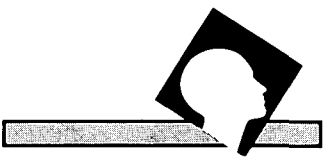
This is the first of a series of occasional essays prepared through the auspices of the CSICOP Education Subcommittee.

What's Wrong with Science Education?

Look at the Family

RAYMOND A. EVE



Changes in society, including the disintegration of the family, are at the root of the problems in science education, and education in general.

A great many articles and PBS television shows have recently posed the sticky question "What's wrong with science education in the United States?" Many of the answers proffered have suggested that tinkering with the science curriculum, or with science teaching methods, or with science teachers, will largely fix the problem. Unfortunately, I'd like to suggest that it's unlikely that a multitude of changes *within* science education will do much more than put a bandaid on a gaping wound. The real trouble lies outside of the science classroom.

A recent issue of a major metropolitan newspaper carried an editorial-page headline, writ large, that opined: "The Fight Against Literacy [*sic*] Needs Broad Support." Unfortunately, the irony of that headline seems but one further indication that literacy (including the scientific variety) already seems as doomed as Donald Trump's bank account. It will be a rare reader of these pages who has not seen a train of depressing studies indicating that our children don't know much about science. But at least science has lots of company. It turns out that U.S. students don't know much about history or literature either. Or geography. Or politics.[1] And the list grows, seemingly ad

infinitum. How can this have happened?

While one might expect that the answer in a journal like this one would concern itself specifically with the science-education system, I'd like to strike out in a somewhat different direction. Our need is not so much to ask what's wrong with *science* education as to ask what's wrong with education in general. I take this approach in part because, surprisingly, there is considerable evidence that our college students have been improving at science achievement lately more so than is true for most of their other subjects, but the improvement is minimal.

A Plethora of Explanations

Many critics have quite correctly raised issues like teacher selection and preparation (e.g., most elementary school teachers are themselves largely uninterested in science and unprepared to teach it). They have suggested that schools lack substantive required courses. They have pointed to the "dumbing down" of textbooks and to the increasing number of texts written by professional writers with little background in the subject matter. Others have pointed to increased teacher workloads. (Many have to take second jobs because of chronically low salaries and therefore assign fewer essays and less homework.) Still others have cited bureaucratic inefficiency and externally mandated, inflexible "lesson plans" that leave no time for experimentation or questions. Others have mentioned the lack of merit pay for teachers. Still others have bemoaned the pervasive lack of lab facilities.

While many of these factors are undoubtedly important, in order to really understand what's wrong in science education (as in all other areas) we must examine some major sociological trends.

Changing Patterns of Social Control

There are now about two million runaway children in the United States every year. Simultaneously, our divorce rate is believed to be the highest in the world. (About half of recent marriages will end in divorce, after an average duration of only seven years.)

In divorce cases, the courts usually award custody of the child to the mother, but women receive alimony in less than one-fifth of divorce settlements. Simultaneously, the illegitimacy rate has increased 500 percent since 1950. Further, about three-quarters of America's unmarried young women are sexually active—but most don't practice birth control. One-fourth of American women are pregnant by the age of 19, and 80 percent of them are unmarried.

The overall effect of these trends has been the "feminization of poverty." Specifically, nearly all one-parent families are headed by women, and more than half of such families live below the poverty line.

The effects of these trends are most noticeable among black families: almost two out of three black families live in single-parent homes. Currently, more than half of all births among blacks are to teenage mothers. The result is that one out of every two black children is born into poverty. (And it is among this latter group that we find scientific literacy at its lowest ebb.)

What we are seeing in the United States is, of course, a widespread change in the patterns of socialization and social control. Indeed, increasing proportions of our offspring become "latchkey children" at best, "throwaway children" at worst. The Asso-

ciated Press recently reported that at least 100,000 children in *intact* families are now homeless (not counting runaway, throwaway or abandoned children). Finally, the number of families in which both parents work has risen to more than half. This means that overburdened teachers are often now responsible for the moral instruction of their charges as well. This, of course, further limits school time spent on intellectual development.

The significance of the disappearance of the American family is all the more obvious if we note that the strongest predictor of academic success is parental emphasis on the importance of education.

Avoid Pain: Graduate in the U.S. without Studying!

A recent poll found that children in Taiwan spend three and a half times as many hours on homework every week as U.S. students do. Among U.S. high school students, fewer than 10 percent do more than two hours of homework a day, but between 40 and 60 percent watch television more than two hours a day.

Teachers are well aware of the supervision problem. A recent study of American teachers by Metropolitan Life found the most common reason teachers gave for poor student performance was that children are left at home on their own after school. This lack of discipline at home eventually shows up in school. An Office of Educational Research and Improvement study found that 27 percent of U.S. teachers thought students in 1985 were somewhat less disruptive than in 1980, but 44 percent found them "somewhat more" or "much more" disruptive.

Finally, let us not forget that in the United States only about half of black and Hispanic teenagers graduate from high school. In Japan, nearly all students complete high school (and in the bargain they go to school 60 days more a year than their American counterparts).

Perhaps these figures can help us to understand why the arrest rate for serious crimes (i.e., FBI "Index" crimes) among 14- to 17-year-olds in the United States has risen by half since 1972.[2] The overall rate of arrests for adolescents between 1950 and 1985 rose nearly 3,000 percent. My purpose here is not to blame the kids, or single mothers, or working parents, but to suggest that these figures indicate the breakdown of the traditional form of the U.S. family. It is a breakdown that has left many of our young people feeling powerless, deserted by adults, and impossibly distant from participation in the adult world. The result is a largely autonomous adolescent peer group upon which the teen is increasingly dependent, even though such groups lack much in the way of resources for promoting emotional maturation. After presenting these figures to a class on adolescence, I suggested that perhaps I should write a book called *How to Raise Yourself.* One student replied that its intended audience probably wouldn't be able to read it but that maybe I could make a video!

What can we do about the depressing picture before us? The answer seems to depend on which of the two "Americas" one asks.

Two Americas?

U.S. citizens are nearly evenly split between "cultural traditionalists" and "cultural modernists." Cultural traditionalists are oriented to "familyism," and believe that a thing is "true" by reason of tradition, faith, or authority. They would like to turn back the clock

Medicine seller in market at Yelwa, a town of 33,000. He is selling ingredients rather than finished medicine. Crocodile skull is in right foreground. Kainji Reservoir is in background.

Riches in particular are thought to be achieved only through sorcery. In consequence, people who are exceptionally successful in their communities may find themselves accused of sorcery, or at least talked about in this vein. Fear of being thought of as using "wealthmagic" (*lukudi* in Yoruba) may persuade people to hide or bury their savings—that is, unless they own strong counter magic. Such idling of resources hinders economic development, which cries out for the productive investment of capital.

Why is the belief in witchcraft and magic so widespread in Africa despite the enormous headway made by education and health services since independence? My preferred hypothesis is that it has to do with the way these services were brought to Africa. For most of the colonial period and certainly until the end of World War II, education and health services for Africans were the exclusive province of Christian missions. To some extent they were grudgingly subsidized by governments in need of literate clerical workers and other civil servants, but management and curriculum remained firmly in religious hands. What we tend to think of as "Western civilization" was thus not presented as a rational-logical system and approach to life, but rather as a superior gift from a truer god. Health was achieved not through biology and chemistry, but by the grace of Christ. Other ideas were muddled together with Christianity, the "superiority" of the white man, "proper" dress to cover up the correct body parts, monogamy and marriage customs, the "right" names for children, i.e., biblical and European. To go to school meant to become Christian, and Christianity was valued as an attribute of the sophisticated, literate person.

to deal with our societal problems (witness the "Christian reconstructionists"). Cultural modernists, on the other hand, tend to believe a thing is true by means of rational data-collection and hypothesis-testing. They tend to believe that morals are largely man-made (rather than divinely mandated) and that returning to the literal word of God will not solve modern social problems. Instead, they emphasize the need to meet rapid social change with social experimentation and flexible ethics.

The two groups are locked in a profound battle for control of the "means of cultural reproduction," a battle that takes its most obvious form in attempts to control the schools—witness controversial instructional issues like creation/evolution, sex education, and school prayer.

And here's the punchline. The Jim Bakkers, Pat Robertsons, Jerry Falwells, et al., are offering the public an emotionally appealing, "commonsensical" program for living, *including* how to socialize kids. Can the public be blamed for leaning in this direction when the rest of us fail to offer an attractive alternative? Cultural modernists have yet to develop an appealing alternative method of socialization, or to find new living patterns that somehow combine the strength of family and community ties with the broader, more open views of freedom, choice, and reason that have become characteristic of the U.S. family in the late twentieth century.

President Ronald Reagan wanted to strengthen the family in America. Unfortunately, it is not at all clear that there is (or at least will be for much longer) much of a traditional American family left. If not, we had better decide either how to get it back or else how we are going to socialize our children. Maybe job-sharing by mates is one answer, or maybe it's highly professionalized day care.

It is only after we deal with this dilemma—which is characteristic of contemporary Western societies—that we can expect much in the way of scholastic improvement in general or the advancement of science learning in particular.

Postscript

While awaiting publication of this article, I attended a meeting of the Hogg Foundation, which is housed on the campus of the University of Texas at Austin and is devoted to improving mental health. A guest speaker at the meeting was David Hamburg, a past president of the American Association for the Advancement of Science and current president of the Carnegie Corporation. Imagine my surprise to find the first half of Dr. Hamburg's speech to be a near duplicate of the remarks above. It turns out that the Carnegie Corporation has discovered the socialization dilemma too, and has now made one of its major goals the funding of research to see what can be done to alleviate the problem.

Notes

1. For examples of literacy surveys in these areas, consult the 1989 Gallup poll of 67 colleges and universities conducted for the National Endowment for the Humanities; also see *National Geographic*, December 1989.

2. The FBI index includes homicide, rape, aggravated assault, robbery, burglary, larceny/theft, auto theft, and arson.

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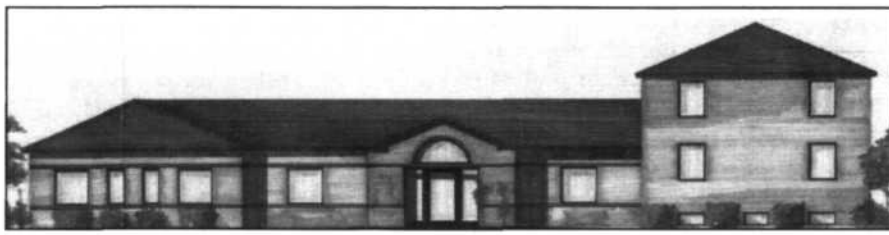
CSICOP Headquarters Progress Report

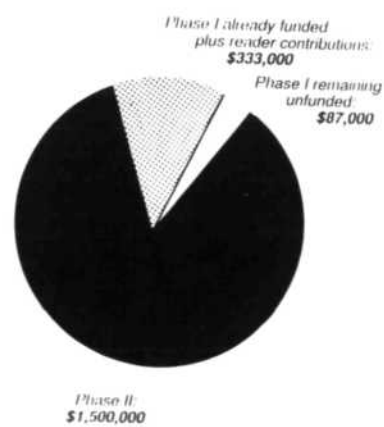
Phase I Complete



The Phase I building, a combined conversion-construction project awaits spring occupancy.

Construction of Phase I of the Center for Inquiry, CSICOP's new headquarters complex, is now complete. Phase I comprised the conversion of an existing residential building for office use, enhanced by a custom-designed, open-plan addition. Spring occupancy is anticipated, which will bring most administrative and production functions of CSICOP and the SKEPTICAL INQUIRER to a new suburban location near the State University of New York at Buffalo's new North Campus.

In order to improve efficiency and share costs, CSICOP and the SKEPTICAL INQUIRER are conducting this project in cooperation with the Council for Democratic and Secular Humanism (CODESH), publisher of FREE INQUIRY magazine.



The generosity of readers and friends has provided the funds to keep the project on track thus far. As this is written $93,000 has been received from readers of the SKEPTICAL INQUIRER and FREE INQUIRY—about half of the total needed to pay off Phase I construction. ($240,000 was previously funded from internal resources to acquire the land, obtain design services and get construction under way.)

Completing the 5,700-square-foot Phase I conversion project was an important first step. But the greatest challenge lies ahead: raising $1,500,000 to erect the wholly new Phase II building. This almost 25,000-square-foot building will incorporate a permanent home for our new research library, seminar/meeting rooms, additional office space, and other vitally needed facilities.

When the Phase II building is complete, all CSICOP and SKEPTICAL INQUIRER operations—including administration, magazine production, media production, storage and mailing, editorial support, and ancillary activities—will relocate to the suburban complex. This will further improve operating efficiency and equip the SKEPTICAL INQUIRER for continued future growth.

It Can't Continue Without Your Support

A variety of funding sources are being pursued. But the ultimate success of this ambitious building project depends on the continued support of readers and friends. Please give generously. If you have contemplated making an extraordinary gift to the cause of skepticism, this is the moment. If you would like to make a significant gift in three yearly installments, we will be happy to arrange your pledge.

The names of donors of $1,000 or more will be entered in a commemorative album that will be on display in the Phase I building. Donor's of $5,000 or more will also be honored on a metal plaque in the lobby of the Phase II building when it is completed. A seminar room in the Phase II building will be named after patrons who give $25,000, and a wing of the building will be named after anyone giving $100,000 or more, if they so desire.

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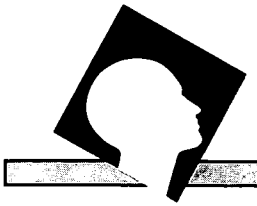
Book Review



Skepticism in Introductory Psychology Texts

Introduction to Psychology, 10th ed. By Rita L. Atkinson, Richard C. Atkinson, Edward E. Smith, and Daryl J. Bem. Harcourt Brace Jovanovich, New York, 1990. 874 pp. Cloth, $34.00.

Psychology: The Science of Behavior, 3rd ed. By Neil R. Carlson. Allyn & Bacon, Needham Heights, Mass. 1990. 683 pp. Cloth, $46.00.

Psychology, 2nd ed. By David G. Myers. Worth Publishers, Inc., New York, 1989. 720 pp. Cloth, $41.95.

Psychology, 2nd ed. By Carole Wade and Carol Tavris. Harper & Row, New York, 1990. 803 pp. Cloth.

ROBERT H. CORMACK

Most instructors probably would be quite happy to use any of the four books reviewed here as a text in an introductory psychology course. I selected *Introduction to Psychology*, by Atkinson, Atkinson, Smith, and Bem because it is the latest edition of a popular text in use for more than four decades. Originally written by Ernest R. Hilgard, this is the first edition for which he is not an author. It is very likely that during its long history, more students have used this book than any other current introductory psychology text. I chose Carlson's book primarily because I am well acquainted with his physiological psychology textbook, *Physiology of Behavior* (Allyn & Bacon, 1986) and am impressed by its clarity and scholarship. The texts by Myers and by Wade and Tavris were previously unfamiliar to me except for brief descriptions in "Some Recent Books" by Kendrick Frazier in the Winter and Spring 1990 issues of *SI*. [Since then, an excerpt from Wade and Tavris appeared as an article, "Thinking Critically and Creatively," in the Summer 1990 *SI*.—ED.]

All four books are clearly written, factually accurate, comprehensive in coverage, and attractively packaged and illustrated. All of them encourage students to think critically, to examine evidence carefully, and to learn the scientific method. As a result, I shall limit this review to some aspects of the texts of special interest to skeptics.

Table 1 is a list of entries found in the subject indexes of the four texts. This table must be interpreted with

care. I based the selection on my opinion about topics I thought would be of interest to readers of the SKEPTICAL INQUIRER. The indexes do not differ very much in size. Myers's is the longest, and Wade and Tavris's the shortest. They differ by about 15 percent.

The important caveat is that often a topic is discussed but not mentioned in the index. For instance, Myers does not list "bonding" in the index, but he has a beautiful discussion of the harm done to parents by an overemphasis on the importance of bonding. Parents who cannot have early physical contact with their newborn (e.g., in the case of premature infants) do *not* risk psychological damage to their child. But parents who have been led to believe in such damage can suffer needlessly, thinking that they have, in some way, failed their child.

After examining all the texts I can state that the indexes do provide a rough gauge of the amount of attention paid by each to unusual claims, the paranormal, and pseudoscience. Even though ESP is not covered by Carlson, I will compare the other three texts on that topic because it is of central concern to skeptics. Then I will compare briefly the four texts on their treatment of the polygraph and hypnotism.

Extrasensory Perception

Atkinson, Atkinson, Smith, and Bem: The glossary entry for "extrasensory perception" is "Response to external stimuli without any known sensory contact."

This book devotes more than seven pages to ESP in a chapter titled "Consciousness and Its Altered States." There is almost no mention of the history of research in this area. After an initial description of telepathy, clairvoyance, precognition, and psychokinesis, the discussion centers around the ganzfeld experiments introduced in 1974. These are described as the most promising for providing compelling evidence for the existence of ESP. The authors use the debate between Ray Hyman and Charles Honorton (Hyman 1985; Hyman and Honorton 1986; Honorton 1985) over the ganzfeld experiments as a vehicle for examining the different interpretations of the evidence, and skepticism about ESP.

The authors first discuss the replication problem and admit that fewer than 50 percent of the studies analyzed in the debate yielded significant results. They then point out that a meta-analysis shows that 23 of the 28 studies obtained positive results, giving a significance level better than .001. The failure of some investigators to find ESP is discussed in terms of the social influence of the experimenter and the fact that in other research areas (e.g., placebo effects and classical conditioning) certain investigators have experienced difficulty in obtaining positive results while others have not. Finally, they note that replication is a complex issue and that when effects are weak, "it is unrealistic to demand that any real effect be replicable at any time by any competent investigator."

The next topic is that of inadequate controls. Flawed procedures permitting sensory leakage, inadequate security, and inadequate randomization are mentioned specifically. Multiple measures and statistical tests, optional stopping, and other inadequacies are not mentioned. The impossibility of determining whether a specific flaw did or did not contribute to positive findings in a specific study is answered by reference to meta-analysis. Both Hyman and Honorton found no correlation between either security or sensory leakage and posi-

tive results. Of four meta-analyses, three show no relationship between positive results and poor randomization.

The final issue concerning the ganzfeld studies is the file-drawer problem. After defining the problem, the book notes that the *Journal of Parapsychology* actively seeks studies finding negative results. It also offers Honorton's conclusion that more than 400 unreported studies with negative results would be required to cancel the significant effects of his meta-analysis.

A good skeptical assessment of anecdotal evidence is followed by a skeptical treatment of skepticism. After observing that extraordinary claims require extraordinary proof, the authors note that what is extraordinary varies with what we believe or know. They present the old tale of meteorites and suggest that quantum mechanics may make the claims of ESP quite ordinary.

The section on ESP ends with three-quarters of a page devoted to a discussion of why psychologists are particularly skeptical. First, given their mind set, psychologists find ESP more extraordinary than do others. Second, psychologists are more familiar with cases of procedural flaws and fraud in ESP research. Third, psychologists know that the popular press exaggerates findings by psychologists and parapsychologists. Fourth, psychologists are aware of the data concerning our ability to fool ourselves. Nevertheless, the section concludes that some psychologists are too skeptical, or rather that their skepticism is not well founded.

Carlson: There is no glossary entry for "extrasensory perception" in Carlson's text. This is not surprising since there is no mention of extrasensory perception in the book. This lack is not to be construed as a lack of skepticism. Carlson is very thoughtful about scientific method and quite often points out issues about which we have too little evidence to come to firm conclusions.

While preparing for this review, I looked at the treatment of ESP by six other introductory textbooks with 1989 or 1990 copyrights. Three of them, like Carlson's, ignored ESP completely. Well, not quite! One of the three used six lines to explain that since there is no evidence that ESP exists there is no reason to discuss it. The other books (including Carlson's) that do not discuss ESP may ignore it for the same reason. Of the remaining three texts that did discuss ESP, two presented highly skeptical accounts and the third used the topic to illustrate how strongly held opinions can figure as importantly as data in a scientific controversy.

Myers: The glossary entry for "extrasensory perception" is: "The controversial claim that perception can occur apart from sensory input. Said to include telepathy, clairvoyance, and precognition."

Myers discusses ESP as the final topic in his chapter on perception. His treatment is well balanced but skeptical. He makes good use of the clairvoyance experiment by Bruce Layton and Bill Turnbull (1975) in which subjects attempted to identify digits in computer-generated lists. Those who were told ESP was beneficial correctly identified more digits than others who were told ESP was harmful. After describing the experiment and the significant positive results, he leaves the topic and discusses skepticism about ESP. He begins by talking about James Randi's Project Alpha, in which magicians Steve Shaw and Michael Edwards used their skills in deception to make scientists at Washington University's McDonnell Laboratory think they

TABLE 1

Subject Index Entries of Interest to Skeptics for the Four Texts
(An "X" indicates that the entry is found in that text.)

	Atkinson et al.	Carlson	Myers	Wade & Tavris
Acupuncture	X			X
Age Regression	X		X	
Astrology			X	X
Barnum Effect	X		X	X
Biofeedback	X		X	X
Biorhythms				X
Bonding (infant)		X		X
Burt, Sir Cyril				X
Coincidence				X
ESP	X		X	X
Firewalking			X	
Geller, Uri				X
Hypnotism	X	X	X	X
Loch Ness Monster			X	
Near-Death Experiences			X	
Out-of-Body Experiences				X
Palm Readers			X	
Polygraph	X	X	X	X
Psychics			X	
Reincarnation			X	
Sociobiology			X	X
Subliminal Perception			X	X
Total	7	3	15	15

might have "psychic powers." Myers notes that before echo-location by bats was discovered, some people attributed the navigational ability of bats to clairvoyance.

Myers uses the notion of foretelling the future as a context in which to discuss the accuracy of psychics, our surprise at coincidences, and our tendency to remember vivid experiences and reinterpret them to fit our expectations. He quotes and paraphrases several skeptics to the effect that after many years of looking no one has found a reproducible effect and no one has come up with a reasonable theory to explain the possibility of ESP.

Now Myers returns to the Layton and Turnbull study and describes how a skeptical editor of the *Journal of Experimental Social Psychology* agreed that if the investigators would repeat the study he would publish the results of both experiments. Layton and Turnbull repeated the experiment—with null results.

Myers concludes with a personal answer, clearly identified as such. To quote one sentence, "We can be open

to new ideas without being gullible, critical without being cynical."

Wade and Tavris: The glossary entry for "extrasensory perception" is: "Perception that does not appear to depend on normal sense organ stimulation. Its existence has not been proven."

Wade and Tavris first discuss ESP in an introductory chapter titled "How Psychologists Know What They Know." This is a chapter on the scientific method. ESP is used to illustrate a refusal to risk disconfirmation. When subjects fail to demonstrate telepathy, they are said to be having a bad day. And if they do poorly enough, they are said to be showing telepathy avoidance.

Later in a chapter on sensation and perception, Wade and Tavris devote two pages to a skeptical discussion of ESP. They define "telepathy," "clairvoyance," precognition," and "out-of-body experiences." They point out that telepathy is more plausible than precognition in that the latter contradicts our beliefs about space and time. They do not describe the history of research on ESP or any specific experiments. They briefly mention coincidence and selective memory in reference to anecdotal evidence. They point to sloppy design, poor security, and improper statistical analyses as flaws in many ESP studies.

Hypnosis

All four books treat hypnotism at length and in several different places (e.g., in discussions of altered states of consciousness, psychoanalysis, multiple personality disorder, etc.). Although there are differences in emphasis, all give evenhanded discussions of different theories. Only Atkinson et al. fail to discuss the use of hypnosis to improve the memories of witnesses to crimes and other critical events. The other three present highly skeptical views concerning this and point out that hypnotized subjects *create* meaningful memories as well as recall them. Neither Carlson nor Atkins et al. discuss age regression under hypnosis. Both Myers and Wade and Tavris explain that subjects invent plausible scenarios when age-regressed, but make errors in keeping with their knowledge or lack of it. All four books conclude that hypnosis is a valuable research tool and stress that we need to learn more before we can be certain about the nature of the phenomenon.

Polygraph

The polygraph has many legitimate research and diagnostic uses. It is simply a device for measuring physiological variables like heart rate, breathing, skin conductance, and so on. According to Lykken (1981) it was first used as a "lie detector" by William Marston, who claimed to have found a specific lie response. Marston, who also created the comic-strip character "Wonder Woman," touted the virtues of the machine. He played an important role in bringing it to the attention of the American public. Needless to say, no specific lie response exists. For further information see Lykken (1981) or Shneour (1990).

Carlson mentions the polygraph only in connection with sleep and dream research, not as a lie detector. Atkinson et al. discuss lie detection with the polygraph and with the voice-stress analyzer. Their discussion is less skeptical and critical than either Wade and Tavris or Myers, but it does point out that the polygraph does not detect lies, but arousal. They show how an innocent person may show arousal and how the guilty may not. They give data on false positives, but do not make clear all the implications of the

data. Atkinson et al. do not discuss recent legislation limiting the use of the polygraph in employee screening, nor do they mention the American Psychological Association statement opposing its use. They mention ways of beating the machine. They note that a person may refuse a test, but if it is part of an employee screening program they probably won't get the job.

Both Wade and Tavris and Myers are strongly critical of the polygraph as a lie detector. In addition to most of the points made by Atkinson et al., they both note that the innocent are more often hurt than the guilty are helped. And they mention recent Congressional action and the American Psychological Association's statement. Myers talks about the methods of convincing the examinee of the validity of the device. He also discusses the use of the "guilty knowledge test" in criminal investigations.

Summary

All four of these books would make fine texts for an introductory psychology course. None of them could be said to be gullible on controversial issues. Some highly skeptical instructors might prefer a text that avoids highly dubious issues and sticks to what is known about the field of psychology. Such instructors will appreciate the virtues of Carlson's text. Others may prefer authors who go out of their way to confront extraordinary claims and who provide very skeptical treatments of them. Either Myers's or Wade and Tavris's books will appeal to them. Finally, for those who like their texts to take a less skeptical stance and to treat fewer paranormal or pseudoscientific issues, but would like students to be introduced to the most highly visible ones, Atkinson, Atkinson, Smith, and Bem is recommended.

References

Honorton, C. 1985. Meta-analysis of psi ganzfeld research: A response to Hyman. *Journal of Parapsychology*, 49:51-91.

Hyman, R. 1985. The ganzfeld psi experiment: A critical appraisal. *Journal of Parapsychology*, 49:3-49.

Hyman, R., and C. Honorton. 1986. A joint communique: The psi ganzfeld controversy. *Journal of Parapsychology*, 50:351-364.

Layton, B. D., and B. Turnbull. 1975. Belief, evaluation, and performance on an ESP task. *Journal of Experimental Social Psychology*, 11:166-179.

Lykken, D. T. 1981. *A Tremor in the Blood: Uses and Abuses of the Lie Detector*. New York: McGraw-Hill.

Shneour, E. A. 1990. Lying about polygraph tests. SKEPTICAL INQUIRER, 14:292-297.

Weil, A. 1974a. Parapsychology: Andrew Weil's search for the true Geller. *Psychology Today*, 8(1):45-50.

———. 1974b. Parapsychology: Andrew Weil's search for the true Geller—Part II: The letdown. *Psychology Today*, 8(2):74-78.

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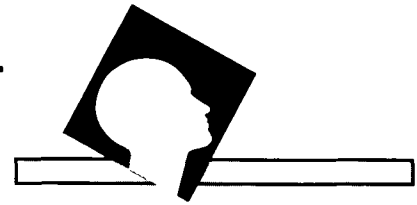
Some Recent Books



Clear Thinking: A Practical Introduction. Hy Ruchlis with Sandra Oddo. Foreword by Isaac Asimov. Prometheus Books, Buffalo, N.Y., 1990. 271 pp. Index. $15.95, paper. A former science teacher's lively introduction to the basic principles of critical analysis, illustrating how to evaluate evidence, isolate facts, and employ logical reasoning skills in everyday life. Many examples of how to identify and cut through bogus arguments, diversions, contradictions, and falsehoods found in conversation and in newspapers, magazines, and television.

The Creationist Movement in Modern America. Raymond A. Eve and Francis B. Harrold. G. K. Hall & Co., Publishers, 70 Lincoln St., Boston, MA 02111, 1990. 234 pp. Index. $25.95, cloth; $11.95, paper. A study of creationism as an American social movement in opposition to the scientific theory of evolution. Defines creationism, explores its history, profiles its various factions, traces the development of creationist organizations and tactics, and identifies the movement's influence on the courts, legislatures, and school boards.

The Edges of Science: Crossing the Boundary from Physics to Metaphysics. Richard Morris. Prentice Hall Press, New York, 1990. 244 pp. Index. $18.95, cloth. Report on the latest speculations about the nature and origin of the universe. Includes such topics as the Big Bang, the inflationary universe, the farthest things in the universe, superstrings, and an inquiry into where the universe came from. A final section on the edges of science and metaphysics briefly considers wormholes, time travel, and the weak and strong anthropic principles.

Open to Question: The Art of Teaching and Learning by Inquiry. Walter L. Bateman. Jossey-Bass Publishers, San Francisco, 1990. 221 pp. Index. $21.95, cloth. Teacher's passionate and lively demonstration of how to teach by inquiry rather than by providing answers. "Give students a set of facts and slip the leash. They speculate, they create new concepts, they apply old concepts, they test, they reject, they ask for more evidence." Includes chapters on Telling and Showing, Discovering Your Own Bias, Coping with Rigid Beliefs, Discovering Assumptions, Checking the Evidence, Discovering Insights, Changing Your Role as a Teacher, and Hazards, Reassurances, and Joys.

The Supernatural, the Occult, and the Bible. Gerald A. Larue. Prometheus Books, Buffalo, N.Y., 1990. 303 pp. $21.95, cloth. Larue, an emeritus professor of biblical history and archaeology, examines the scriptural underpinnings of occult and supernaturalistic notions that survive in contemporary society. Argues that biblical supernaturalism and modern occultism are two sides of the same coin and shows how they engender and support each other. Suggests that contemporary religions cannot shirk responsibility for some of the more foolish excesses of occult practice. Among the topics discussed are magic, channeling (ancient and modern),

astrology, extraterrestrials, Satan, exorcism, witches, seers, clairvoyants and psychics, faith healing, the Mother Goddess cult, amulets, dowsing, and life beyond life.

Thinking Critically About New Age Ideas. William D. Gray. Wadsworth Publishing Co., 10 Davis Drive, Belmont, CA 94002, 1991. 164 pp. Index. [No price given.] Book and course, by philosophy instructor, focusing on the paranormal, asking, and showing, what it is about paranormal claims and the popular reasoning used to support them that most scientists find wanting. Written for use in a logic or critical-thinking course or as a supplement to other courses where critical thinking about the paranormal is important. Using topics and examples students find interesting, Gray shows how scientists think when they are doing good science and teaches the general methods of science and distinctions between real science and pseudoscience. Includes discussions on misuse of language, the need to state claims clearly, common fallacies, the paranormal (investigating the paranormal, possible vs. impossible, who has burden of proof, factors explaining belief), and science versus pseudoscience, including words of caution about science (science deals in probabilities, science has limits, not all issues are scientific), and "baloney detection."

—*Kendrick Frazier*

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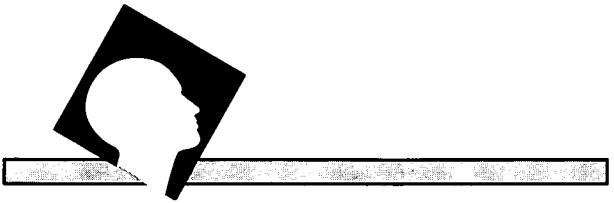

Adair, R. K. "Electrophobia: Are Biological Effects of Weak ELF Fields Impossible?" *Physics and Society* (American Physical Society), 19(4):12-13, October 1990. Essay by Yale physicist treating claims that extremely low frequency electromagnetic fields are carcinogenic as "aberrant science" in the tradition of N-rays, mitogenetic rays, polywater, and cold fusion. "This electrophobia, based on bad science, certified by an inept government review conducted by non-scientists, and shouted from the mountain tops by mercenary journalists acting in their role of intellectual terrorists, is already a burden on the substance and morale of our society. . . ."

Arnheim, Michael. "Our Lady of the Prophecies." *Punch*, June 29, 1990, pp. 30-31. A humorous look at the difficulties of interpreting the ambiguous predictions of Nostradamus.

Barber, Paul. "The Real Vampire." *Natural History*, October 1990, pp. 74-82. Brings perspective of forensic pathology to help explain origin of beliefs that exhumed corpses can come to life. The processes of decomposition cause buildup of gases that can make bodies shift and can cause blood from the lungs to emerge from the mouth, appearing to be fresh blood. A corpse can even emit sounds when moved or punctured, due to air forced out by compression of the chest cavity. "A corpse that did not emit such sounds when a stake was driven into it would be unusual. . . . To vampire killers who are digging up a corpse, anything unexpected is taken for evidence of vampirism."

Blackmore, Susan. "The Lure of the Paranormal." *New Scientist*, September 22, 1990, pp. 62-65. Excellent inquiry into why people believe in the paranormal. "The answer to that question, and the recent research exploring it, tell us little about the paranormal itself but much about the way our minds work." Blackmore discusses "psychic experiences" and shows both why they seem so profound and how such things as our inability to judge probabilities correctly make us misinterpret such experiences as unexplainable. Blackmore describes most belief in the paranormal as a result of "an illusion of causality."

Braswell-Means, Laurel. "The Popular Art of Geomancy in the Medieval West and Contemporary Asia." *Journal of Popular Culture*, 23(4):131-143, Spring 1990. An overview of the ancient custom of divining favorable locations. It is still practiced in Asia (sometimes with computers) under the name of *feng shui*.

Broad, William J. "Cold Fusion Still Escapes Usual Checks of Science." *New York Times*, October 30, 1990, pp. C1, C12. Excellent report on the cold-fusion debacle, focusing on why the conventional checking mechanisms of science apparently failed to resolve the issue decisively enough and how the process of science "can be subverted by dedicated mavericks who defy the canons of science."

Brown, Chandos Michael. "A Natural History of the Gloucester Sea Serpent: Knowledge, Power and the Culture of Science in Antebellum America." *American Quarterly*, 42(3):402-436, September 1990. In the summer of 1817 there were numerous reports of a sea serpent off the coast of Massachusetts. Recently formed scientific societies collected data on the beast—even offering a tentative genus classification—in the hopes of proving their own usefulness and establishing the importance of the science and wildlife of America.

Buhler, Rich. "Scientists Discover Hell in Siberia." *Christianity Today*, 34(10):28-29, July 16, 1990. Buhler, a radio talk-show host, reports on some of the bizarre rumors and urban legends that have spread through the Christian community in recent years. These include the drilling accident mentioned in the title, the famous Procter and Gamble/Satanism fraud, and alleged federal plans to eliminate religious broadcasting.

Campbell, Duncan. "Heaven on Earth." *New Statesman and Society*, 3(120):10-11, September 28, 1990. A skeptical report on the British business interests of the Transcendental Meditation movement. These include a natural-medicine college and an "ideal village" in Lancashire.

Chippindale, Christopher. "Piltdown: Who Dunit? Who Cares?" *Science*, 250:1162-1163, November 23, 1990. Review of two books by Frank Spencer: *Piltdown: A Scientfic Forgery* and *The Piltdown Papers 1908-1955*.

Crowe, Richard A. "Astrology and the Scientific Method." *Psychological Reports*, 67:163-191, August 1990. Detailed appraisal of astrology. Includes sections on the Scientific Case Against Astrology, the Statistical Case Against Astrology, and Why Do People Believe in Astrology?

Dale, Stephen. "Journey Into the New Age Mind." *This Magazine* (Canada), August 1990, pp. 11-15. A look at how "soulful consumerism evolved into a marketing scam for the material world."

Deitch, Joseph. "Howard Blum." *Publishers Weekly*, August 17, 1990, pp. 46-48. An interview with Blum, author of *Out There: The Government's Secret Quest for Extraterrestrials*. Blum maintains that the Pentagon continues a covert search for extraterrestrial life and that the government had harassed and deliberately misled UFO activists.

Downey, Charles. "Discovering the Lethal Side of Herbs." *Los Angeles Times*, November 12, 1990, B3. Herbs can be potent medication and sales of herbal products range up to a billion dollars a year, but at least 26 commonly available herbs contain toxic compounds that can cause disease. Comfrey is the most dangerous; others include buckthorn, pokeroot, and teas with pure licorice.

Goleman, Daniel. "Doubts Rise on Children as Witnesses." *New York Times*, November 6, 1990, pp. C1, C6. Children, it is often said in sexual child-abuse cases, "do not make things up," but in fact scientific studies show that children are highly suggestible. This is a balanced report on the controversy.

Kelly, I. W., W. H. Laverty, and D. H. Saklofske. "An Empirical Investigation of the Relationship Between Worldwide Automobile Traffic Disasters and Lunar Cycles: No Relationship." *Psychological Reports*, 67:987-

994, 1990. Examination of 364 worldwide traffic disasters over a 22-year period (through 1989) found no relationship between the number of deaths in a disaster and the synodic lunar cycle, the distance of the moon from the earth, or the combined tidal effect from the moon and sun. No evidence of a tendency for disasters to occur during any phase of the synodic lunar cycle was found.

Lankford, James E. "Faith Healing and Hearing Loss: Two Case Reports." *Hearing Journal*, 43(9):18-22, September 1990. A technical report on two children whose mother claimed they were cured of hearing loss by a faith healer. Comparison of examinations made before and after the "healing" did not support the claim.

Martin, Deirdre, and Mark Levine. "Psychics and Law Enforcement Agencies." *Law Enforcement Technology*, September 1990, pp. 58-63. Journalistic report finds that some departments have been "burned" by using psychics and have turned away from them; others keep an open mind, usually turning to them as a last resort. "Psychics come out of the woodwork during cases which the media become heavily involved in," notes psychologist Martin Reiser of the Los Angeles Police Department, whose two research studies on the use of psychics yielded negative results. Curiously, the article suggests that police departments ask psychics who volunteer their services to provide "credentials," whatever those might be.

McManus, Patrick F. "Aliens Three." *Outdoor Life*, November 1990, pp. 134ff. A witty putdown of flying-saucer stories: "Experience has taught me that elderberry wine and space aliens are not a good mix."

Pankratz, Loren (guest editor). "Unvalidated, Fringe, and Fraudulent Treatment of Mental Disorders." *International Journal of Mental Health.* 19(3):3-81, Fall 1990. Special issue publishes nine articles. They include: Petr Skrabanek, "Reductionist Fallacies in the Theory and Treatment of Mental Disorders"; Barry Beyerstein, "Brainscams: Neuromythologies of the New Age"; S. N. Young, "The Abuse of Amino Acids: Pseudoscientific Distortion of Legitimate Psychopharmacotherapies"; P. S. Alberts and M. S. Alberts, "Unvalidated Treatment of Premenstrual Syndrome"; and B. R. Cassileth, "Mental Health Quackery in Cancer Treatment."

Pins, Kenneth. "Reassessing TM." *Des Moines Register*, November 18, 19, 20, 21, 1990. Four-part investigative series into the Transcendental Meditation Movement and Maharishi International University. Includes "Tranquil State of TM Shaken by Former Meditators' Charges"; "Are TM Meditators Being Held hostage by Thought Control?"; "TM: Flying in the Face of Scientific Standards" (a good evaluation of the claims that meditators fly); and "New School of Thought Keeps Its Accreditation" (by George Clifford and Debra Wiley).

Rothman, Stanley. "Journalists, Broadcasters, Scientific Experts and Public Opinion." *Minerva: A Review of Science, Learning and Policy*, 28(2):117-133, Summer 1990. Journalists frequently misreport the scientific consensus on issues, due in part to their own beliefs and expectations. Rothman uses the examples of nuclear energy and IQ tests.

Rowan, Katherine E. "Strategies for Explaining Complex Science News." *Journalism Educator*, 45(2):25-31. Rowan, a journalism teacher, dis-

cusses the obstacles encountered in trying to report science news accurately and interestingly to a general audience. She offers some exercises to be used in instructing journalism students.

Schrock, John Richard. "Dissection." *Kansas School Naturalist* 36(3):3-15, February 1990. Shows how the examination of real organisms is essential to all students' science literacy.

ter Riet, G., J. Kleijnen, and P. Knipschild. "Acupuncture and Chronic Pain: A Criteria-Based Meta-Analysis." *Journal of Clinical Epidemiology* (U.K.), 43(11):1191-1199, 1990. Review using 18 predefined methodological criteria of 51 controlled clinical studies on the effectiveness of acupuncture in alleviating chronic pain. The quality of even the better studies proved to be mediocre. The results from the better studies were highly contradictory. Conclusion: "The efficacy of acupuncture in the treatment of chronic pain remains doubtful."

Tropkin, Alexander. "It's All in Your Spine." *Soviet Life,* 8(407):26-30, August 1990. A predictable result of *glasnost:* Anatoli Gritsenko has brought chiropractic medicine to Moscow. The article claims he has been successful in treating asthma, gastritis, and so on.

Winson, Jonathan. "The Meaning of Dreams." *Scientific American,* November 1990, pp. 86-96. Report on recent research suggesting that dreaming reflects a pivotal aspect of the processing of memory. Dreams appear to be a nightly record of a basic mammalian memory process: the means by which animals form strategies for survival and evaluate current experience in light of those strategies.

Zicklin, Eric. "Reading Between the Lines." *Boston Phoenix,* November 9, 1990, p. 7. One man's graphoanalytic journey. Writer's amused report on his experience with a graphologist. She said the handwriting (she didn't know it was his) was of a man who works extremely well with his hands. "'I am a menace when working with my hands,' he says. She also said that the handwriting exhibited no literary skills or creativity. "I had heard that before," Zicklin comments, "but never from someone who had yet to read my clips."

—Kendrick Frazier and Robert Lopresti

Forum

Why Do They Call? Reporters, Skeptics, and the Formula Story

STEVEN N. SHORE

As a known skeptic, you get a call, often from a local radio station or newspaper, asking your opinion of some paranormal claim or recent news development connected with pseudoscience. The caller is a reporter, many times one with a reputation for investigative reporting or common sense. You answer all of his or her questions, providing background information, supporting evidence, and of course "sound bites." The reporter listens, takes notes or has a tape-recorder running, and adds expressions of interest and even supportive comments. The conversation may last a few minutes or a couple of hours. At last you say goodbye, and think that it has been an interesting experience. This time, you have found somebody in the media who was willing to listen to the skeptical side, who is even somewhat of a skeptic, who for a change contacted you, and who exercises and appreciates journalistic responsibility.

Then, days, weeks, or months later, the report appears or the show airs. You search through the article to see what the slant is and how you and other skeptics were quoted. And there you see the result of all the time and hope you've devoted to the story. The standard formula runs like this: "Of course, some scientists have disputed [fill in the claim], saying that [it violates some law or another of nature, the claim goes against common sense, it is simply impossible, or it is uninteresting—take your pick and add to the list to taste]. But others [cite the numerous testimonials, dispute scientists with their own tests, have long historical evidence or efficacy or truth, etc.]. . . ." The story hasn't changed at all because of the skeptical input.

So why do they call? We have watched as the skeptical movement has steadily made inroads into the editorial offices of the print and electronic media. We have reached the point where many stories now have some mention of the existence of skeptics and/or critics of extraordinary claims. We have seen the expansion of the number of reporters who feel that they need to present some alternative viewpoint to make their story complete.

But what have we gained? To answer this, we must first admit that we have become part of the formula. Yes, reporters do call but they don't really listen. The skeptic's role seems to be to help a reporter sell an otherwise questionable story to editors, more than to enlighten the public. We have been co-opted. Our language is often used as a smokescreen. Reporters call themselves

Suggestions for Interviews

1. Pay special attention to the possibilities afforded by radio talkshows. These are usually broadcast live, and this guarantees that you have your say without having it edited out before airtime.

2. Have an agenda in mind. Don't forget that you have a role in setting the direction of any conversation with a reporter.

3. Don't let yourself be put in a position of a mere nay-sayer. Get across directed points about skepticism and critical thinking. Emphasize the role of critical thinking in evaluating claims even outside of the paranormal realm.

4. If you have any special expertise or credentials, make sure that this is made clear up front.

5. Be willing to say that a claim is garbage if it is, and make sure that you give reasons. Don't ever dismiss a claim lightly, and don't ever do it without reasons.

6. If you don't know an answer, say so and don't apologize. Get the questioner to provide the source of the claim and then check up on it and get back to the reporter or interviewer.

skeptical at the start of a story, but by its end they become believers in the face of "overwhelming evidence."

So should we hang up when reporters call? Emphatically not. That would teach them nothing positive and would add to the prejudice against skeptical voices. Should we be hostile? Again, no. Should we be more circumspect? Yes! We should never lose sight of the fact that we are only playing a pre-scripted part and that there are certain lines that we are expected to deliver. We must be innovative, quotable, spontaneous, rational.

And we must be skeptical of those who ask our opinions, of those who boil those opinions down from quarts to drops, and of the ways that those drops are added to the formula of the final product. Most of all, we must never become self-satisfied about the effect we are having. This approach eases the disappointment, and it makes the next time a little less stinging.

Steven N. Shore is an astronomer at the NASA Goddard Space Flight Center and an SI *Consulting Editor.*

The Paranormal as An Aspect of Normal Experience

ELAINE COX CLEVER

"Paranormal" experiences have been testified to ever since the advent of written records. Such experiences have met with both belief and disbelief. If believed, the experiences were considered to have actually happened. If disbelieved, the person reporting the incident was considered to be either deluded or lying. The following account of three unusual personal experiences will, I believe, help illuminate how our minds work.

1. Many years ago I attended a lecture at the Friends Yearly Meeting in Philadelphia. The lecturer was relating dramatic events in his life as a dedicated antiwar, antinuclear activist. He was a dynamic and spellbinding speaker. Suddenly, as I was

listening, absorbed in his words, I saw the room fill with a soft, billowing white light. The light was everywhere the same, without shadows. I looked at the other people in the audience to see their reactions but not one gave any indication that anything unusual was happening. The light remained for about five minutes and then gradually faded.

2. My college-age son, an only child, had been living in France for more than a year. My husband and I missed him very much. One day in late spring as I was walking to meet my husband, I saw a young man sitting on a low wall. I stopped in astonishment and then ran forward calling him by name and greeting him affectionately and asking many questions: "How did you get here? Why didn't you call? Does your father know you're here? Have you been waiting for me? Oh, I am so happy to see you!"

The young man continued to sit on the wall and simply stared at me. Finally he said, "I'm *not* your son, if that's who you think I am."

"What do you mean, you're not my son?" I asked. "Is this some kind of game?" I repeated that I was overjoyed to see him, but he continued to deny he was my son. I found this impossible to accept because of course I knew my own son. I studied him carefully. He had the same color hair, the same eyes, the same complexion, the same build. Finally, after several minutes, I did notice an anomaly. This young man's hands were stockier than my son's, but I rationalized that he had been doing manual work.

The young man said he had to leave, that someone was picking him up. I asked his name and where he lived. He gave me a name and told me he lived in another part of the city. I told him I was reluctant to believe that this was not just some elaborate joke but that I would accept it for the time being. Just then a car pulled up, and he was driven away. When my husband picked me up a few minutes later, I related the incident in an offhand way as a case of mistaken identity, but *to my eyes* there was no mistake.

3. My father, whom I dearly loved, died in 1975. A few months after his death, when I was still grieving deeply, my husband took me out to dinner, hoping that it would lighten my spirits. We were seated in a rather dimly lit room and were studying the menu when I looked up to see a party of four enter the restaurant. One of the men was my father! I was shocked and then felt a a great surge of joy. He sat down at a table facing me. His face, his bearing, his mannerisms, his voice were my father's. All the things I loved about him—his gentleness, his good humor, his wit, his concern and consideration for the people he was with—were apparent. I was suddenly overcome with grief, and tears started to slide down my face. My husband handed me his handkerchief, but I didn't tell him why I was crying. I managed to get through the dinner, and as we were leaving I asked my husband if the person seated at the next table didn't remind him of my father. He said yes, there was a resemblance.

I puzzled over these incidents when they occurred and for many months afterward. I think I now have a pretty clear picture of what happened, and why. My perceptions were altered because I was deeply moved or emotionally distressed. My mind seized on an aspect of external reality and built a picture for me that satisfied my longings. My mind threw up a filter between me and the objective world, creating illusions that were every bit as real to me as other experiences.

What I find most interesting is that, in the face of overwhelming sensual

experience, my mind kept seeking logical explanations for the phenomena. A predisposition to believe in the supernatural is not a necessary precondition for very strange and unsettling experiences. Apparently, even the most normal of minds, of which I believe mine is one, can create alternative realities that are indistinguishable, at the time of their occurrence, from real-world encounters. There may indeed be more things in heaven and earth than my philosophy dreams of, and surely among them are the hidden workings of our own minds.

Elaine Cox Clever lives in Haddonfield, New Jersey.

A 'UFO Sighting' in A Wordsworthian Pseudo-Sonnet

BARBARA FRIEDBERG

In our culture, the distinction between truth and fiction is frequently blurred. On television, supposed documentaries invent facts—because history is all fiction anyway, isn't it?—and magic is regarded by many as science, for does not science seem more and more like magic? Art and literature are themselves debased by this convergence. In the nineteenth century, Romantic poets who made supreme claims for the imagination also reverenced fact as revealed by science.

A modest example is a poem by William Wordsworth, written in 1803, that documents the interplay of fantasy and reality in our sightings of natural phenomena. In his book *The UFO Verdict* (Prometheus Books, 1986, p. 10), Robert Sheaffer has reminded us that "every time Venus reaches its peak brilliance in the evening sky, hundreds of . . . 'UFO sightings' are made. . . . Indeed, Venus is so brilliant that it can often be seen before the sun has set, or even in full daylight, if one knows exactly where to look. . . . Even the ardent UFO believer Jacques Vallee has written: 'No single object has been misinterpreted as a "flying saucer" more often than Venus.' "

In this poem, Wordsworth debunks his own such misinterpretation. No, it is not an extraterrestrial being (though he had fancied it was), nor an implausible traveler boldly rising from the earth. The "star" is what science says it should be: Hesperus—the planet Venus—the Evening Star. Yet marveling at the solitary bright object in a blue sky, Wordsworth cannot quite discard the idea that it must be "ambitiously" out of place. Like a "true believer" in the occult, he wants to retain his first flash of fancy even after it has been superseded by fact. Yet unlike the true believer, he is more interested in portraying with detachment the workings of his own mind: "An inquest wrought within me," he recalls. His fantasy is clearly derived from what the star only "seems" to do.

And it is a strangely sf-like fantasy. Wordsworth was a Christian believer, but his "step beyond" does not seem to propel him into the Christian afterlife. Rather, some new region is conceived ad hoc, where he can "trace/ Some ground not mine." The idea is to go beyond nature and yet somehow belong there. Isn't that just what people want to find on a UFO—the strange, yet surprisingly familiar? The experience Wordsworth seeks had no

It Is No Spirit Who From Heaven Hath Flown

It is no Spirit who from heaven hath flown
And is descending on his embassy;
Nor Traveller gone from earth the heavens to espy!
'Tis Hesperus—there he stands with glittering crown,
First admonition that the sun is down!
For yet it is broad day-light: clouds pass by;
A few are near him still—and now the sky,
He hath it to himself—'tis all his own.
O most ambitious Star! an inquest wrought
Within me when I recognised thy light;
A moment I was startled at the sight;
And, while I gazed, there came to me a thought
That I might step beyond my natural race
As thou seem'st now to do: might one day trace
Some ground not mine: and, strong her strength above,
My Soul, an Apparition in the place,
Tread there with steps that no one shall reprove.

—*William Wordsworth*

defined form until space travel became imaginable.

The notion of a usurpation, miraculously validated, is ingeniously worked into the formal pattern of the poem. It begins as a perfect Petrarchan sonnet: eight lines rhymed ABBA-ABBA and another six, beginning with, "O most ambitious Star!" also correctly rhymed. But precisely with the words, "some ground not mine," three extra lines are inserted and then worked into the rhyming pattern. Few readers notice that the poem has an awkward number of lines—seventeen! But no one, it is hoped, "shall reprove," although they may jib at his concluding sequence of tenses.

This poem illustrates how imagination can be rooted in a strong sense of nature as it is. It was felt by the Romantics to be more of a power in that the truth it pulled against was so strong. Today, when truth and fiction blur and interpenetrate in the name of entertainment, or democratic good feeling, or magical self-importance, we may the more value those old poets whose awe before human creativity was matched by an equal reverence toward natural fact.

Barbara Friedberg is an intellectual historian with a doctorate in English and comparative literature. She lives in New York City.

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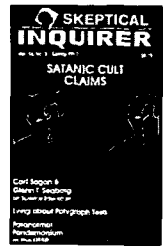

WINTER 1991 (vol. 15, no. 2): Special report / Gallup poll: Belief in paranormal phenomena, *Gallup and Newport.* Science and self-government, *Piel.* West Bank collective hysteria episode, *Stewart.* Acceptance of personality test results, *Thiriart.* Belief in astrology: A test of the Barnum effect, *French, Fowler, McCarthy, and Peers.* A test of clairvoyance using signal-detection, *McKelvie and Gagné.* Intercessory prayer as medical treatment? *Wittmer and Zimmerman.* Tipler's Omega Point theory, *Martin Gardner.*

FALL 1990 (vol. 15, no. 1): Neural Organization Technique: Treatment or Torture, *Worrall.* The Spooks of Quantum Mechanics, *Stenger.* Science and Sir William Crookes, *Hoffmaster.* The 'N' Machine, *Cumming.* Biological Cycles and Rhythms vs. Biorhythms, *Wheeler.* The Mysterious Finger-Lift Levitation, Gardner. 1990 CSICOP Conference.

SUMMER 1990 (vol. 14, no. 4): Ghosts make news: How four newspapers report psychic phenomena, *Klare.* Thinking critically and creatively, *Wade and Tavris.* Police pursuit of satanic crime, Part 2, *Hicks.* Order out of chaos in survival research, *Berger.* Piltdown, paradigms, and the paranormal, *Feder.* Auras: Searching for the light, *Loftin.* Biorhythms and the timing of death, *Lester.* Relativism in science, *Gardner.*

SPRING 1990 (vol. 14, no. 3): Why we need to understand science, *Sagan.* The crisis in pre-college science and math education, *Seaborg.* Police pursuit of satanic crime, Part 1, *Hicks.* The spread of satanic-cult rumors, *Victor.* Lying about polygraph tests, *Shneour.* Worldwide disasters and moon phase, *Kelly, Saklofske, and Culver.* St. George and the dragon of creationism, *Gardner.*

WINTER 1990 (vol. 14, no. 2): The new catastrophism, *Morrison and Chapman:* A field guide to critical thinking, *Lett.* Cold fusion: A case history in 'wishful science'? *Rothman.* The airship hysteria of 1896-97, *Bartholomew.* Newspaper editors and the creation-evolution controversy, *Zimmerman.* Special report: New evidence of MJ-12 hoax, *Klass.* The great Urantia mystery, *Gardner.*

FALL 1989 (vol. 14, no. 1): Myths about science, *Rothman.* The relativity of wrong, *Asimov.* Richard Feynman on fringe science. Luis Alvarez and the explorer's quest, *Muller.* The two cultures, *Jones.* The 'top-secret UFO papers' NSA *won't* release, *Klass.* The metaphysics of Murphy's Law, *Price.* The Unicorn at large, Gardner.

SUMMER 1989 (vol. 13, no. 4): The New Age—An Examination: The New Age in perspective, *Kurtz.* A New Age reflection in the magic mirror of science, *O'Hara.* The New Age: The need for myth in an age of science, *Schultz.* Channeling, *Alcock.* The psychology of channeling, *Reed,* 'Entities' in the linguistic minefield, *Thomason.* Crystals, *Lawrence.* Consumer culture and the New Age, *Rosen.* The Shirley MacLaine phenomenon, *Gordon.* Special report: California court jails psychic surgeon, *Brenneman.*

SPRING 1989 (vol. 13, no. 3): High school biology teachers and pseudoscientific belief, *Eve and Dunn.* Evidence for Bigfoot? *Dennett.* Alleged pore structure in Sasquatch footprints, *Freeland and Rowe.* The lore of levitation, *Stein.* Levitation 'miracles' in India, *Premanand.* Science, pseudoscience, and the cloth of Turin, *Nickell.* Rather than just debunking, encourage people to think, *Seckel.* MJ-12 papers 'authenticated'? *Klass.* A patently false patent myth, *Sass.*

WINTER 1989 (vol. 13, no. 2): Special report: The 'remembering water' controversy, *Gardner and Randi;* Bibliographic guide to the 'dilution controversy.' Pathologies of science, precognition, and modern psychophysics, *Jensen.* A reaction-time test of ESP and precognition, *Hines and Dennison.* Chinese psychic's pill-bottle demonstration, *Wu Xiaoping.* The Kirlian technique, *Watkins and Bickel.* Certainty and proof in creationist thought, *Leferriére.*

FALL 1988 (vol. 13, no. 1): Special report: Astrology and the presidency, *Kurtz* and *Bob.* Improving Human Performance: What about parapsychology? *Frazier.* The China syndrome: Further reflections on the paranormal in China, *Kurtz.* Backward masking, *McIver.* The validity of graphological analysis, *Furnham.* The intellectual revolt against science, *Grove.* Reich the rainmaker, *Gardner.*

SUMMER 1988 (vol. 12, no. 4): Testing psi claims in China, *Kurtz, Alcock, Frazier, Karr, Klass, and Randi.* The appeal of the occult: Some thoughts on history, religion, and science, *Stevens.* Hypnosis and reincarnation, *Venn.* Pitfalls of perception, *Wheeler.* Wegener and pseudoscience: Some misconceptions, *Edelman.* An investigation of psychic crime-busting, *Emery.* High-flying health quackery, *Hines.* The bar-code beast, *Keith.* Occam's Razor and the nutshell earth, *Gardner.*

SPRING 1988 (vol. 12, no. 3): Neuropathology and the legacy of spiritual possession, *Beyerstein.* Varieties of alien experience, *Ellis.* Alien-abduction claims and standards of inquiry (excerpts from Milton Rosenberg's radio talk-show with guests Charles Gruder, Martin Orne, and Budd Hopkins). The MJ-12 Papers: Part 2, *Klass.* Doomsday: The May 2000 prediction, *Meeus.* My visit to the Nevada Clinic, *Barrett.* Morphic resonance in silicon chips, *Varela and Letelier.* Abigail's anomalous apparition, *Durm.* The riddle of the

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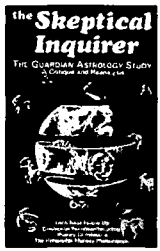

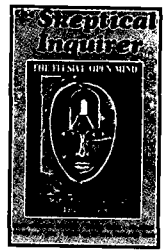

Colorado ghost lights, *Bunch and White.* The obligation to disclose fraud, *Gardner.*

WINTER 1987-88 (vol. 12, no. 2): The MJ-12 papers: Part I, *Philip J. Klass.* The aliens among us: Hypnotic regression revisited, *Baker.* The brain and consciousness: Implications for psi, *Beyerstein.* Past-life hypnotic regression, *Spanos.* Fantasizing under hypnosis, *Reveen.* The verdict on creationism, *Gould.* Irving Kristol and the facts of life, *Gardner.*

FALL 1987 (vol. 12, no. 1): The burden of skepticism, *Sagan.* Is there intelligent life on Earth? *Kurtz.* Medical Controversies: Chiropractic, *Jarvis;* Homeopathy, *Barrett, M.D.;* Alternative therapies, *Jones;* Quackery, *Pepper.* Catching Geller in the act, *Emery.* The third eye, *Gardner.* Special Report: CSICOP's 1987 conference.

SUMMER 1987 (vol. 11, no. 4): Incredible cremations: Investigating combustion deaths, *Nickell and Fischer.* Subliminal deception, *Creed.* Past tongues remembered? *Thomason.* Is the universe improbable? *Shotwell.* Psychics, computers, and psychic computers, *Easton.* Pseudoscience and children's fantasies, *Evans.* Thoughts on science and superstrings, *Gardner.* Special Reports: JAL pilot's UFO report, *Klass;* Unmasking psychic Jason Michaels, *Busch.*

SPRING 1987 (vol. 11, no. 3): The elusive open mind: Ten years of negative research in parapsychology, *Blackmore.* Does astrology need to be true? Part 2: The answer is no, *Dean.* Magic, science, and metascience: Some notes on perception, *D. Sagan.* Velikovsky's interpretation of the evidence offered by China, *Lo.* Anomalies of Chip Arp, *Gardner.*

WINTER 1986-87 (vol. 11, no. 2): Case study of West Pittston 'haunted' house, *Kurtz.* Science, creationism and the Supreme Court, *Seckel,* with statements by *Ayala, Gould,* and *Gell-Mann.* The great East Coast UFO of August 1986, *Oberg.* Does astrology need to be true? Part 1, *Dean.* Homing abilities of bees, cats, and people, *Randi.* The EPR paradox and Rupert Sheldrake, *Gardner.* Followups: On fringe literature, *Bauer;* on Martin Gardner and Daniel Home, *Beloff.*

FALL 1986 (vol. 11, no. 1): The path ahead: Opportunities, challenges, and an expanded view, *Frazier.* Exposing the faith-healers, *Steiner.* Was Antarctica mapped by the ancients? *Jolly.* Folk remedies and human belief-systems, *Reuter.* Dentistry and pseudoscience, *Dodes.* Atmospheric electricity, ions, and pseudoscience, *Dolezalek.* Noah's ark and ancient astronauts, *Harrold and Eve.* The Woodbridge UFO incident, *Ridpath.* How to bust a ghost, *Baker.* The unorthodox conjectures of Tommy Gold, *Gardner.*

SUMMER 1986 (vol. 10, no. 4): Occam's razor, *Shneour.* Clever Hans redivivus, *Sebeok.* Parapsychology miracles, and repeatability, *Flew.* The Condon UFO study, *Klass.* Four decades of fringe literature, *Dutch.* Some remote-viewing recollections, *Weinberg.* Science, mysteries, and the quest for evidence, *Gardner.*

SPRING 1986 (vol. 10, no. 3): The perennial fringe, *Asimov.* The uses of credulity, *de Camp.* Night walkers and mystery mongers, *Sagan.* CSICOP after ten years, *Kurtz.* Crash of the crashed-saucers claim, *Klass.* A study of the Kirlian effect, *Watkins and Bickel.* Ancient tales and space-age myths of creationist evangelism, *McIver.* Creationism's debt to George McCready Price, *Gardner.*

WINTER 1985-86 (vol. 10, no. 2): The moon was full and nothing happened, *Kelly, Rotton, and Culver.* Psychic studies: The Soviet dilemma, *Ebon.* The psychopathology of fringe medicine, *Sabbagh.* Computers and rational thought, *Spangenburg and Moser.* Psi researchers' inattention to conjuring, *Gardner.*

FALL 1985 (vol. 10, no. 1): Investigations of firewalking, *Leikind and McCarthy.* Firewalking: reality or illusion, *Dennett.* Myth of alpha consciousness, *Beyerstein.* Spirit-rapping unmasked, *V. Bullough.* The Saguaro incident, *Taylor and Dennett.* The great stone face, *Gardner.*

SUMMER 1985 (vol. 9, no. 4): Guardian astrology study, *Dean, Kelly, Rotton, and Saklofske.* Astrology and the commodity market, *Rotton.* The hundredth monkey phenomenon, *Amundson.* Responsibilities of the media, *Kurtz.* 'Lucy' out of context, *Albert.* The debunking club, *Gardner.*

SPRING 1985 (vol. 9, no. 3): Columbus poltergeist: I, *Randi.* Moon and murder in Cleveland, *Sanduleak.* Image of Guadalupe, *Nickell and Fischer.* Radar UFOs, *Klass.* Phrenology, *McCoy.* Deception by patients, *Pankratz.* Communication in nature, *Orstan.* Relevance of belief systems, *Gardner.*

WINTER 1984-85 (vol. 9, no. 2): The muddled 'Mind Race,' *Hyman.* Searches for the Loch Ness monster, *Razdan and Kielar.* Final interview with Milbourne Christopher, *Dennett.* Retest of astrologer John McCall, *Ianna and Tolbert.* 'Mind Race,' *Gardner.*

FALL 1984 (vol. 9, no. 1): Quantum theory and the paranormal, *Shore.* What is pseudoscience? *Bunge.* The new philosophy of science and the 'paranormal,' *Toulmin.* An eye-opening double encounter, *Martin.* Similarities between identical twins and between unrelated people, *Wyatt et al.* Effectiveness of a reading program on paranormal belief, *Woods.* Pseudoscientific beliefs of 6th-graders, *A. S. and S. J. Adelman.* Koestler money down the psi-drain, *Gardner.*

SUMMER 1984 (vol. 8, no. 4): Parapsychology's past eight years, *Alcock.* The evidence for ESP, *C. E. M. Hansel.* $110,000 dowsing challenge, *Randi.* Sir Oliver Lodge and the spiritualists, *Hoffmaster.* Misperception, folk belief, and the occult, *Connor.* Psychology and UFOs, *Simón.* Freud and Fliess, *Gardner.*

SPRING 1984 (vol. 8, no. 3): Belief in the paranormal worldwide: Mexico, *Mendez-Acosta;* Netherlands, *Hoebens;* U.K., *Hutchinson;* Australia, *Smith;* Canada, *Gordon;* France, *Rouzé.* Debunking, neutrality, and skepticism in science, *Kurtz.* University course reduces paranormal belief, *Gray.* The Gribbin effect, *Roder.* Proving negatives, *Pasquarello.* MacLaine, McTaggart, and McPherson, *Gardner.*

WINTER 1983-84 (vol. 8, no. 2): Sense and nonsense in parapsychology, *Hoebens.* Magicians, scientists, and psychics, *Ganoe and Kirwan.* New dowsing experiment, *Martin.* The effect of TM on weather, *Trumpy.* The haunting of the Ivan Vassilli, *Sheaffer.* Venus and Veli-

ovsky, *Forrest*. Magicians in the psi lab, *Gardner*.

ALL 1983 (vol. 8, no. 1): Creationist pseudoscience, *chadewald*. Project Alpha: Part 2, *Randi*. Forecasting adio quality by the planets, *Dean*. Reduction in aranormal belief in college course, *Tobacyk*. Humaiistic astrology, *Kelly and Krutzen*.

SUMMER 1983 (vol. 7, no. 4): Project Alpha: Part , *Randi*. Goodman's 'American Genesis,' *Feder*. Battling on the airwaves, *Slavsky*. Rhode Island UFO film, *Emery*. .andmark PK hoax, *Gardner*.

SPRING 1983 (vol. 7, no. 3): Iridology, *Worrall*. The Nazca drawings revisited, *Nickell*. *People's Almanac* predictions, *Donnelly*. Test of numerology, *Dlhopolsky*. Pseudoscience in the name of the university, *Lederer nd Singer*.

WINTER 1982-83 (vol. 7, no. 2): Palmistry, *Park*. The great SRI die mystery, *Gardner*. The 'monster' treerunk of Loch Ness, *Campbell*. UFOs and the not-soriendly skies, *Klass*. In defense of skepticism, *Reber*.

FALL 1982 (vol. 7, no. 1): The prophecies of Nostradamus, *Cazeau*. Prophet of all seasons, *James Randi*. Revival of Nostradamitis, *Hoebens*. Unsolved mysteries and extraordinary phenomena, *Gill*. Clearing the air about psi, *Randi*. A skotography scam, *Randi*.

SUMMER 1982 (vol. 6, no. 4): Remote-viewing, *Marks*. Radio disturbances and planetary positions, *Meeus*. Divining in Australia, *Smith*. "Great Lakes Triangle," *Cena*. Skepticism, closed-mindedness, and science fiction, *Beyerstein*. Followup on ESP logic, *Hardin and Morris* and *Gendin*.

SPRING 1982 (vol. 6, no. 3): The Shroud of Turin, *Mueller*. Shroud image, *McCrone*. Science, the public, and the Shroud, *Schafersman*. Zodiac and personality, *Gauquelin*. Followup on quantum PK, *Hansel*.

WINTER 1981-82 (vol. 6, no. 2): On coincidences, *Ruma Falk*. Croiset: Part 2, *Hoebens*. Scientific creationism, *Schadewald*. Follow-up on 'Mars effect,' *Rawlins*, responses by *CSICOP Council* and *Abell and Kurtz*.

FALL 1981 (vol. 6, no. 1): Gerard Croiset: Part 1, *Hoebens*. Test of perceived horoscope accuracy, *Lackey*. Planetary positions and radio propagation, *Ianna and Margolin*. Bermuda Triangle, 1981, *Dennett*. Observation of a psychic, *McIntyre*.

SUMMER 1981 (vol. 5, no. 4): Investigation of 'psychics,' *Randi*. ESP: A conceptual analysis, *Gendin*. The extroversion-introversion astrological effect, *Kelly and Saklofske*. Art, science, and paranormalism, *Habercom*. Profitable nightmare, *Wells*. A Maltese cross in the Aegean? *Loftin*.

SPRING 1981 (vol. 5, no. 3): Hypnosis and UFO abductions, *Klass*. Hypnosis not a truth serum, *Hilgard*. H. Schmidt's PK experiments, *Hansel*. Further comments on Schmidt's experiments, *Hyman*. Atlantean road, *Randi*. Deciphering ancient America, *McKusick*. A sense of the ridiculous, *Lord*.

WINTER 1980-81 (vol. 5, no. 2): Fooling some people all the time, *Singer and Benassi*. Recent perpetual motion developments, *Schadewald*. National Enquirer astrology study, *Mechler, McDaniel, and Mulloy*. Science and the mountain peak, *Asimov*.

FALL 1980 (vol. 5, no. 1): The Velikovsky affair — articles *by Oberg, Bauer, Frazier*. Academia and the occult, *Greenwell*. Belief in ESP among psychologists, *Padgett, Benassi, and Singer*. Bigfoot on the loose, *Kurtz*. Parental expectations of miracles, *Steiner*. Downfall of a would-be psychic, *McBurney and Greenberg*. Parapsychology research, *Mishlove*.

SUMMER 1980 (vol. 4, no. 4): Superstitions, *Bainbridge and Stark*. Psychic archaeology, *Feder*. Voice stress analysis, *Klass*. Follow-up on the 'Mars effect,' Evolution vs. creationism, and the Cottrell tests.

SPRING 1980 (vol. 4, no. 3): Belief in ESP, *Morris*. UFO hoax, *Simpson*. Don Juan vs. Piltdown man, *de Mille*. Tiptoeing beyond Darwin, *Greenwell*. Conjurors and the psi scene, *Randi*. Follow-up on the Cottrell tests.

WINTER 1979-80 (vol. 4, no. 2): The 'Mars effect' — articles *by Kurtz, Zelen, and Abell; Rawlins; Michel and Françoise Gauquelin*. How I was debunked, *Hoebens*. The metal bending of Professor Taylor, *Gardner*. Science, intuition, and ESP, *Bauslaugh*.

FALL 1979 (vol. 4, no. 1): A test of dowsing, *Randi*. Science and evolution, *Godfrey*. Television pseudodocumentaries, *Bainbridge*. New disciples of the paranormal, *Kurtz*. UFO or UAA, *Standen*. The lost panda, *van Kampen*. Edgar Cayce, *Randi*.

SUMMER 1979 (vol. 3, no. 4): The moon and the birthrate, *Abell and Greenspan*. Biorhythms, *Hines*. 'Cold reading,' *Randi*. Teacher, student, and the paranormal, *Kral*. Encounter with a sorcerer, *Sack*.

SPRING 1979 (vol. 3, no. 3): Near-death experiences, *Alcock*. Television tests of Musuaki Kiyota, *Scott and Hutchinson*. The conversion of J. Allen Hynek, *Klass*. Asimov's corollary, *Asimov*.

WINTER 1978-79 (vol. 3, no. 2): Is parapsychology a science? *Kurtz*. Chariots of the gullible, *Bainbridge*. The Tunguska event, *Oberg*. Space travel in Bronze Age China, *Keightley*.

FALL 1978 (vol. 3, no. 1): An empirical test of astrology, *Bastedo*. Astronauts and UFOs, *Oberg*. Sleight of tongue, *Schwartz*. The Sirius "mystery," *Ridpath*.

SPRING/SUMMER 1978 (vol. 2, no. 2): Tests of three psychics, *Randi*. Biorhythms, *Bainbridge*. Plant perception, *Kmetz*. Anthropology beyond the fringe, *Cole*. NASA and UFOs, *Klass*. A second Einstein ESP letter, *Gardner*.

FALL/WINTER 1977 (vol. 2, no. 1): Von Däniken, *Story*, The Bermuda Triangle, *Kusche*. Pseudoscience at Science Digest, *Oberg and Sheaffer*. Einstein and ESP, *Gardner*. N-rays and UFOs, *Klass*. Secrets of the psychics, *Rawlins*.

SPRING/SUMMER 1977 (vol. 1, no. 2): Uri Geller, *Marks and Kammann*. Cold reading, *Hyman*. Transcendental Meditation, *Woodrum*. A statistical test of astrology, *McGervey*. Cattle mutilations, *Stewart*.

FALL/WINTER 1976 (vol. 1, no. 1): Dianetics, *Wallis*. Psychics and clairvoyance, *Fine*. "Objections to Astrology," *Westrum*. Astronomers and astrophysicists as astrology critics, *Kurtz and Nisbet*. Biorhythms and sports, *Fix*. Von Däniken's chariots, *Omohundro*.

Letters to the Editor

The 'Ferreri technique'

My compliments to Russell Worrall for "Neural Organization Technique: Treatment or Torture?" (*SI*, Fall 1990). This restrained but incisive article should be made available to all school systems and other agencies that come in contact with individuals of any age who have learning or perceptual handicaps.

The "Ferreri technique" has no basis in neuroanatomic or physiologic fact and, if it did not carry appreciable danger, would be merely ludicrous.

What alarms me, a pediatric neurosurgeon, is the potential for serious injury being done to immature skulls, still pliable along suture lines, by the perpetrators of this nonsense. The type of physical force witnessed by one of the mothers quoted by Worrall might indeed cause slight movement of the sphenoid bone. In crushing injuries of the skull base, such "realignments" *can* induce injury to cranial nerves (olfactory, optic, oculomotor—nerves 3, 4, and 6—and at least two divisions of the trigeminal), to say nothing of possible fracturing into nasal sinuses with risk of meningitis.

Compressive lateral pressure to the young skull *can* result in rotation of the petrous pyramids of the temporal bone with significant risk of injury to the auditory, vestibular, and facial nerves. Ocular pressure may induce vasovagal cardia slowing, even temporary cardiac standstill, with risk of cerebral ischemia or seizure, as clearly described by one mother cited in the article.

The "Ferreri technique" is dangerous bunkum, and it should be so described and dealt with.

A. Loren Amacher, M.D.
FRCS(C)
Department of Neurosurgery
Geisinger Medical Center
Danville, Pa.

If the other articles in your publication are written with the same obvious bias and half-truths that the article about the NOT Dyslexia Protocol was written then maybe you are not such a good idea.

With only one exception, when anyone writes or has written about me and my work, *they never interview me* to get my input. I think they should.

The introduction to the article sets the tone and essentially labels what I do and what was attempted in Crescent City as "quackery" and indicates that the doctors who participated in the study and myself are, at best, "dubious practitioners."

A formal clinical study is a reality that has eluded me for a number of reasons. The cost of a study, the population of the study, and, I think, most important, because I am a chiropractor. There are no funds for any study involving a chiropractor, particularly if the study is not in the traditional "back" concept. This California study was the first opportunity to do such a study.

Because this was supposed to be a research study, there would obviously be *no fee* for service. It is absurd to say that we waived *any fee.*

In relation to fee, the figure of $3,500 (p. 41) is preposterous. On average, the learning disabled individual, child or adult, requires three to five treatments, with an average cost of between $450 to $650.

Enuresis is easily and successfully treatable in one or two treatments. Why does Worrall think it is untreatable? Because the establishment has nothing for it? I do not claim to "cure" Down's syndrome. We do, however treat *many* Down's children from all over the world and do improve their overall condition very profoundly, in both their health level and growth potential and in their ability to function and learn. Is this something I shouldn't do, even when I can? Would people come from Germany, Switzerland, Israel, etc., on *recommendation* if nothing could be done?

It is *required* by law that in any research study an informed consent document, which explains the pros and cons of that project, be presented and explained to, and signed by, the participant or legal guardian before they can participate in any study. No one was "induced" to participate. The study was originally intended to accommodate only 20 students, not 48.

The Utah incident specifically involved *flamboyant advertising in the promotion of treatment*, as did the Texas incident, along with other infractions, and not *practicing AK/NOT methods.* Any comment by the Board or other authority as to the efficacy of the treatment itself can only show ignorance in an area that is not their expertise.

If proper investigation were done by Worrall, it would be quite evident that the complaints, which were registered five months after the study was completed, were instigated by politically motivated and/or greedy people and had nothing to do with the treatment, pain, or anything else.

The 17 formal complaints did not represent 17 participants, but rather multiple complaints by the same four people—less than 10 percent of the subjects in the study, not 35 percent as stated. Can you imagine a study with more than 90 percent of the parents satisfied being called fraudulent?

Re the district attorney's filing civil and criminal actions (again politically motivated): These actions were summarily dismissed by Judge Richard Koskow March 18, 1989, and reported in the Triplicate Del Norte newspaper, as no cause for action was established and what *was* done was specifically covered and allowed by statute. Don't you think it strange that with all the legal citations, etc., used in the article that Worrall omitted this piece of information, or *was Worrall trying to make some kind of point?*

Citing the Retinitis Pigmentosa Foundation's funding of certain projects is specifically the point. This organization has funding, *I don't.* Stating that the theories and treatments of NOT must be examined carefully is precisely what I have been trying to get some organization to do for years.

Making statements such as "something *they* call the 'cloacal reflexes' " demonstrates Worrall's lack of knowledge and his prejudice. If he took the trouble to look this reflex up, he would find that it is a known reflex and is part of the gait mechanism. However, again he is trying to make a point.

Both the Ortin Society and the ACLD have described dyslexia and learning disabilities as conditions of *neural disorganization* that involve every aspect of the individual's life and not just the inability to process academic values.

The fact of cranial bone movement has been known for more than 60 years, discovered by the osteopathic profession with further research done by the cranio mandibular dentists. Cranial corrections are used by osteopaths, dentists, physiotherapists, chiropractors, and some medical doctors. The literature he refers to probably states that the cranial bones fuse and don't move, and the earth was flat.

The references I used in the papers published in the applied kinesiology and some chiropractic forums are well known by the chiropractic profession, and Walther's books are very well referenced.

The *Playboy* series "On Human

Sexuality" was a scholarly, specially commissioned work and was the first article to outline the primal survival systems. It was from these that the concept of neural organization grew. You get your ideas where you get your ideas. Could be anyplace, just be open to them. This reference usually gets comments similar to Worrall's. Just shows the stiffness of the commentators.

Worrall infers that the use of applied kinesiology as a diagnostic tool is found only in questionable health practices, but ignores the fact that it is fast becoming a valuable tool of osteopaths, physiotherapists, chiropractors, dentists, and medical doctors doing physical medicine, etc. Worrall obviously knows nothing about applied kinesiology, yet feels competent to comment on it. A little absurd isn't it? After all, only established medicine has the answers.

The testimony of the mothers in one case demonstrates what is known as surrogate testing, which those who have developed some expertise find very useful. The fact that the establishment doesn't understand the energy transfer doesn't make it less useful. They still don't know how aspirin works. The other mother's comment is sheer misstatement of facts. The greatest amount of pressure used is that which could be applied to the end of your nose and not produce pain. Worrall can't really believe a woman who is looking to collect a large sum of money to tell the truth, can he?

No citations on my work will be found in the literature because the establishment will not allow any meaningful investigation to go forth, and in many cases I am the precedent. Somebody has to be first sometime. Does that make it less true? . . .

Carl A. Ferreri
Neural Organization
Technique Center
Brooklyn, N.Y.

Russell S. Worrall replies:

Ferreri's letter is replete with extraordinary claims, similar to those presented to parents and school staff, yet devoid of evidence to support these claims. With regard to Down's afflicted children, the false hope produced by claiming to be able to "improve their overall condition profoundly" is tragic. When the desire for a cure is strong, common sense is too often abandoned. The Del Norte study is a classic example of this suspension of reason involving not just an individual but an entire school district. The skull squeezing and surrogate testing would be humorous if it was not a real life drama played out on unsuspecting parents and children.

From my perspective as an optometrist NOT seems an unreasonable form of treatment based on the evidence presented by proponents, a view shared by Ferreri's professional peers: The "Texas Board of Chiropractic Examiners cannot condone claims dyslexia can be effectively cured through NOT or other unproven techniques. These claims are beyond that which is reasonable and commensurate with the documentation available" (Hartung 1987). In Utah the conclusion was a little more direct, with NOT described as a "one cause, one cure theory of disease which is so inimitable to hucksterism in the health care field" (Jarvis 1987).

Hartung, R. August 1987. July 30-August 1, 1987 Findings of Fact, Conclusions of Law & Ruling Regarding Enforcement Hearing on Dr. Joe T. Boyd, D.C., Texas Board of Chiropractic Examiners, p. 31.

Jarvis, K. B. May 1987. Report of Ethics Committee for State of Utah Department of Business Regulation, Box 45802, Salt Lake City.

Spooks of quantum mechanics

I read with interest Victor Stenger's article, "The Spooks of Quantum Mechanics" (*SI*, Fall 1990). I do not disagree with what Stenger says, but I am uneasy with the way he says it. Anyone unfamiliar with the physical theories he discusses may misinterpret his remarks. For example, consider the following:

> I am not denying the existence of an underlying reality. I agree that the

> moon is there when no one is looking at it. I simply argue that the true reality of the universe is not necessarily manifested by objects possessing attributes, such as position and mass, that we assign them in the process of doing physics. These variables, after all, are human inventions with no precisely definable meaning beyond their measurements as performed with specific instruments like clocks and meter sticks. (pp. 59-60)

Wait a minute. There are physical objects possessing physical attributes. Electrons and photons are such objects. They exist outside people's minds, and they do have physical properties. These physical properties are not "human inventions," because electrons and photons had them billions of years before there were human physicists to discover them. If electrons and photons did not have these properties, but rather certain other properties, human physicists would never have evolved to conceive of them. . . .

Nothing I have said contradicts Stenger's sayings as long as Stenger is interpreted *properly*. Paraphrase Stenger as follows: The true reality of the universe *is* manifested by objects possessing attributes. It is simply that these attributes are not the ordinary ones of classical physics. An electron does not have a position at a certain time; rather, it has the property of *having a certain probability of acting as if it had a certain position if subjected to a certain measurement*. This is a complicated property, but it is real. We may invent ways of measurement, but the electron would have this complicated property whether we measure the electron or not.

Stanley Martens
Cary, Ill.

I enjoyed Victor Stenger's article on the "Spooks" in modern physics. The references below provide a nice introduction to this intriguing topic.

I do have a small bone to pick. Repeated references are made to simultaneous events at different places. It is a fundamental result of special relativity that simultaneity is not well defined for physically separated events. In fact, any two events outside the light cone will be simultaneous in some frame of reference. Frames of reference can also be found that will make either of the events precede the other. Since there is no way for light to travel between the events, causality is not violated.

By speaking of "simultaneous events that are separated in space" the reader is encouraged to retain the intuitive but incorrect concept of global simultaneity. Stenger's remarks are perfectly valid if the phrase is interpreted to mean "events that are simultaneous in some reference frame and are separated in space."

Howard Wallace
Black Diamond, Wash.

Einstein, A. 1956. *The Meaning of Relativity* (Princeton: Princeton University Press), p. 39.
Goldstein, H. 1981. *Classical Mechanics* (Addison-Wesley), pp. 301-302.

The article by Stenger does not fully explain why nonlocal quantum behavior must be thrown out as a concept. To pick nonreality over nonlocality simply to deny paranormal phenomena is more dogmatism than science. Science is the measurement under controlled and repeatable conditions of any phenomenon. When paranormalists can repeatably measure any claim under controlled conditions skeptics will listen.

Mike Rosing
Darien, Ill.

Victor J. Stenger responds:

In a popular article, with its space limitations and requirement of readability, it is often necessary to skip some of the caveats that are necessary for a fully logical presentation. So I appreciate readers Martens and Wallace providing their caveats.

I agree with Martens that real objects possess attributes that act in some vague sense like our physical observables. But the observables we use in our theories depend on how they are defined by the measurement process, and so cannot be made fully isomorphic with intrinsic properties.

Wallace is correct to note that simultaneity depends on one's reference frame. My statements applied to any *reference frame.*

Rosing missed my point. I did not "pick nonreality over nonlocality simply to deny paranormal phenomena." Nonreality is selected by applying Occam's Razor. To be logical, I had no choice. Nonlocality is the less economical hypothesis, requiring the violation of Einstein's relativity. Nonreality violates no known principles. Also, I wish to re-emphasize that I do not discard nonlocal quantum concepts, such as the wavefunction. The wavefunction is simply not observable, and only observables are required to be local.

Draining science of excitement

I was most interested to read about CSICOP's 1990 conference in Washington and the article by Steven Hoffmaster ("Science and Sir William Crookes"), advocating the use of pseudoscience in teaching scientific method/process (both *SI*, Fall 1990).

This was particularly appropriate since I had just returned from the state annual Science Teachers' Association conference where I had the pleasure of delivering the keynote address on "Science, Fraud and Pseudoscience." My message was to teach more science method/process, rather than just the knowledge that science has generated, and to use frauds and pseudosciences as a source of interesting content-free lesson material.

Until recently I taught physiology in our state university. While teaching I had the uneasy feeling that something must be wrong with science teaching in our schools since our students so often demonstrated patent ignorance. Since then, after 20 years of fruitful research, I have changed careers. What can an ex-scientist do for a living? Teach—high school science no less. Now I *know* why our ex-school university students were so deficient—school science really is *awful!* Everything exciting and interesting is removed, everything relevant to students is removed, everything about real science is removed. All that remains is the knowledge that science has produced, with none of the excitement, relevance, and method of how it has produced.

I recently suggested "Define the difference between science and nonscience" for an 11th-grade science examination for high school students who had already had four years of science courses. The other teachers rejected my suggestion as "too hard."

The reason that so much teaching is wedded so strongly to the textbook is, I think, that so many teachers cannot do otherwise. They just don't know science themselves. (My ambition is to fight the good fight by writing a better textbook.)

More power to CSICOP in its promotion of quality science education!

Anthony G. Wheeler
Gayndah State High School
Gayndah, Queensland
Australia

(Dr. Wheeler is the author of the article on biological rhythms in our Fall 1990 issue.—ED.)

Biological teleology

Anthony Wheeler's article (*SI*, Fall 1990) gratifyingly clears up terminological and other confusions undergirding the superstition of biorhythms. Regrettably the article is marred by the unfortunate penchant of biologists for teleological language, if not thought.

Wheeler states: "Biological cycles and rhythms . . . occur for a reason. . . . [Specifically] lambs must be born [at certain times of the year to survive, and] consequently, the sheep has evolved a . . . carefully timed breeding season." Such formulations imply intentionality and purpose, despite the rather ambig

uous statement that "the reason is the result of evolution."

Yet the actual mechanism adduced by Wheeler can, and should, be seen as the fortuitous result of random mutations. The particular outcome, in the words of Riddell (*SI*, Fall 1990, p. 84) "counts as little more than lottery wins and crap shoots. . . ." Sheep, in whom small-scale mutations eventuate in the appropriate effect of melatonin, will bear their young at the most propitious time and, thus, come to predominate.

This is not a petty terminological argument. Teleology is incompatible with both Newtonian and modern science, but popular obfuscators extensively use teleological reasoning. This, in turn, finds support in the careless language of biologists.

Hugo O. Engelmann
DeKalb, Ill.

Anthony Wheeler replies:

In my description of the causes, consequences, and variations in biological cycles and rhythms—in contrast to the causeless (largely?), consequenceless, and unvarying biorhythms—I did abridge my description of the mutation/selection/evolution origin of the sheep's breeding season.

I agree with Hugo O. Engelmann that teleological arguments have no place in modern biology. (Teleology: *Doctrine of final causes; view that developments are due to the purpose of design that is served by them.) I certainly do not think in teleological terms and never intended to imply such an argument in my writing. (In my own defense, I am not sure that my argument is as teleological as Engelmann's synthetic quotation, made up of phrases taken from two paragraphs of text, implies. My "consequently" referred to "selected survival—consequently evolve a breeding season"; not "survival only if bred at one time—consequently acquire a breeding season to achieve this survival.")*

Fortunately, over the years, repeated exposure to the examples and descriptions of logical and coherent arguments in SI *have done a great deal to reduce this biologist's careless language.*

Was Home caught?

In discussing Daniel Dunglas Home, the British medium, Steven Hoffmaster ("Science and Sir William Crookes," *SI*, Fall 1990) writes: "He was never caught red-handed in an overt deception." Hoffmaster lists Houdini's *A Magician Among the Spirits* as one of his sources.

My Ninth Edition of *Encyclopedia Britannica* states Home came from America to England in 1855.

Houdini states that Home was caught by poet Robert Browning in one séance, when Browning seized the alleged materialized head of a dead infant and found he was grasping the bare foot of Home. Houdini states further that R. Barrett Browning, Browning's son, wrote about this exposure in a letter of December 5, 1902, to the *London Times* and stated: "Home was detected in a vulgar fraud."

Houdini also mentions Home being ordered to return money he had swindled from Jane Lyon, a soft-headed 75-year-old widow, after she had sued him in a London court in 1868; and he claims Home was caught by a Russian cop when valuable jewels Home had caused to "dematerialize" and could not "materialize" were found concealed in a hidden pocket in Home's coattails.

Many years ago an aged White Russian who had fought in Russia until 1920 told me about this incident: that a deluded Russian nobleman had prevented Home from being arrested; and he stated that as Home aged, his "arthritis got worse and, as a result, his 'spiritual' powers lessened and disappeared."

Also on frauds and "psychics" but unrelated to the above:

In September, a 13-year-old girl vanished from a nearby town. At least four self-proclaimed "psychics" descended on the gullible local police, who foolishly followed their leads to isolated spots looking for the body. The nonsense ended when a pragmatic FBI man arrived and checked known sex offenders, with the result that the body of the unfortunate girl was found in a shallow grave in the cellar of a neighbor—a man

whom the local police had arrested seven years ago for molesting his own daughter.

At a television interview, the police chief was asked if the arrest of the subject was caused by any psychic lead. He answered, "Absolutely not!" Nevertheless, in years to come, as memories fade, each of the psychics will claim they "assisted" the police in this case.

Patrick J. Leonard, Sr.
Braintree, Mass.

An elaborate joke

Roger Klare describes journalists' typical treatment of psychic subjects as uncritical, intended as entertainment or human-interest "soft news" (*SI*, Summer 1990, Fall 1990). Unfortunately, these accounts are all too often taken seriously by some readers, particularly when the entire story is not told. A recent UPI report that appeared in several local newspapers shows the results of this attitude.

The newspaper story referred to a scientific investigation, published by the Royal Society of Medicine, that appeared to verify the claims of palmistry. The lifelines of 100 corpses had been measured, and a correlation found between the age of the subjects at the time of death and the length of their lifelines. When I first saw this report in the newspaper, I was quite puzzled, since I am a member of the Royal Society of Medicine, which, to my knowledge, was not a "fringe" organization. When I received my next edition of the society journal, I was relieved to find the explanation. The UPI report, as presented in the newspaper, did not stress or even hint that this "study" was an elaborate joke.

Tip-offs included such phrases as: "... a powerful new prognostic sign may thus be within grasp" and "For statistical analysis we considered the Program for Analysis of Log-linear Multidimensional contingencies (PALM)" as well as a photograph of a ruler and a length of string described as "ozone-friendly measuring equipment" (P. G. Newrick, E. Affie, and R. J. M. Corrall. "Relationship Between Longevity and Lifeline: A Manual Study of 100 Patients." *Journal of the Royal Society of Medicine*, 83:499-501, 1990).

The authors do mention an essential flaw in their study that likely explains their findings: The lifelines were measured at the time of death. As the authors acknowledge, the lifeline is probably just one of the many skin wrinkles that gets longer as one gets older, resulting in the oldest subjects having the longest lifelines at death.

The totally serious presentation of this story by UPI disturbs me greatly. I can conclude only that either UPI staff have failed to recognize an obvious joke, expecting such reports to be true, or that they deliberately misrepresented it to create a sensational story. Either conclusion reflects badly on these elite journalists and, in my opinion, amounts to negligent and irresponsible journalism.

T. Bruce D. McNeely, M.D.
Department of Pathology
Vancouver General Hospital
Vancouver, B.C., Canada

A question

Prompted by the letters on "Police, Media, and Satanism" in the Fall 1990 issue, I have a question: Has anyone ever tabulated the number of crimes of violence—especially rape and murder—in which the perpetrator claims that God or the Virgin Mary or some saint "told" him to do it? It seems to me that these cases far, far outnumber those cases where Satanism of some kind is claimed to be the cause.

This, of course, leads to a second set of questions: Why haven't our police investigated this phenomenon? Why haven't they convened seminars to train officers how to deal with this insidious menace? Why are the media silent on this issue?

Richard C. Mankiewicz
Los Angeles, Calif.

DePalma on his 'N machine'

I was charmed and surprised to find an article by Duncan G. Cumming about my N machine/Space Power Generator in the Fall 1990 SKEPTICAL INQUIRER. If it is in fact true that I have discovered a new and formerly unrecognized source of energy, then the testing of my apparatus should be done in such a way that there is not a shadow of equivocality in the determination of the truth of whether the N machine is a true over-unity generator or not.

The N machine/SPG is a low-voltage, very high current dc generator. The various investigators who try to duplicate my results always seem to work with small machines wherein the voltage output is in the millivolt range.

To achieve an actual power gain approaching the 5-8:1 given by the incremental measurements, a big enough machine must be constructed so that the output electrical power far exceeds the mechanical and electrical losses of the current-collection apparatus.

Cumming could have saved himself a lot of trouble by consulting the literature relating to the measurements he made, c.f. "Unipolar Machines: Association of the Magnetic Field with the Field-Producing Magnet, by A. K. Das Gupta, *American Journal of Physics*, 31, 1963. Furthermore, the testing of an N machine must be done in a nonmagnetic environment, not over the bed of an iron lathe, because the induced magnetism in the lathe acts as the stator of a Faraday disc motor or generator which cannot have over 100-percent efficiency.

In the photograph accompanying the article, certainly it is Kincheloe at the left of the picture; it is not Bruce DePalma, who is the person on the right.

It would have been more fair if Cumming had pointed out that the dc drive motor Kincheloe used in his measurements was arbitrarily factored in with a 100-percent assumed efficiency. The mechanical and electrical losses in the drive motor and belt system, if taken into consideration, would lead to a calculation of output/input power ratio considerably greater than the 4:1 quoted in his article.

For those who are skeptical I hope that this does not mean they are not thorough. Research should have been directed to Paramahamsa Tewari of the Indian Atomic Power Board and director of their largest KAIGA, atomic power project, in Karwar, Karnataka, India. In our latest correspondence Tewari writes he is demonstrating a machine of 5-kw *total* input and 30-kw electrical output.

In terms of the future of the planet, the consumption of fossil resources, and the present Middle-East crisis, it is incumbent on those skeptical inquirers to properly investigate the N machine/SPG to determine and convince themselves of the truth or falsity of my contention that electrical energy can be extracted from space by the distortion produced by a rotating cylindrical magnetized conductor wherein the internally generated centripetal force field provides a polarizing distortion producing the positive and negative poles of electricity.

Bruce DePalma
Santa Barbara, Calif.

Duncan G. Cumming replies:

We all agree that the voltage from a homopolar generator is correctly predicted by Maxwell's equations. The controversy is about whether the torque can also be predicted in this way (as believed by the scientific community and confirmed by my experiment) or whether the torque differs from the predicted amount by 500 to 800 percent (as stated by DePalma). If De Palma would like to read my full experimental report, he will see that the lathe was used only for voltage measurements and did not contribute to errors in torque. The experimental accuracy of ± 20 percent was more than sufficient since I was looking for a discrepancy of several hundred percent.

The ultimate test of any over-unity perpetual-motion machine is to build a self-sustaining machine where some of the output power is used to drive the machine. For

example, in Tewari's machine 5 kw of the electrical output could be used to drive the input, leaving a net output of 25 kw and conclusively proving that the N machine works. This has not been done, supposedly because of impedance matching difficulties. However, a direct measurement of torque would go a long way toward demonstrating the feasibility of this.

I would urge De Palma not to take my experimental results at face value, but rather to read the report and repeat the experiment himself—with as much thoroughness as necessary! The apparatus required is very simple, and if De Palma can directly observe a torque less than predicted by theory, then I (and the rest of the scientific community) would be most interested.

New Zealand UFO film

In "Articles of Note," Fall 1990 (p. 93), notice is given of Steuart Campbell's article in the *British Journal of Photography* claiming that the object in New Zealand UFO films taken by a television news crew on December 31, 1978, was "very likely the planet Venus, seen under unusual atmospheric optical conditions." Since it can be established that the films were taken starting around 2:20 A.M., and Venus did not rise until more than an hour later, the "unusual" conditions must have included the transparency of the earth's oceans and crust. Atmospheric science can in no way account for an alleged mirage of that magnitude. Meteorologist William Veezee of SRI demonstrates mathematically in *The Scientific Study of Unidentified Flying Objects*, conducted by the University of Colorado, that "one degree of arc must represent the maximum angular distance that can be expected between the true position of the light source and its refracted image" (Bantam Books, 1969, p. 625). Even this much refraction assumes that the largest temperature gradients ever recorded must be present. Venus was at this time more than 10 degrees below the horizon, some 10 times greater than this.

It is known that a considerable number of Japanese squid boats, collectively giving off more light than a major city to attract squid from the ocean depths, were fishing in nearby waters. Therefore, we need not discard Occam's Razor by hypothesizing mega-mirages of a kind unknown to science to explain the appearance of a brilliant light source.

Critics charge that skeptics will grab at any proposed explanation, no matter how inappropriate. We must not forget to employ critical thinking in evaluating proposed "prosaic" explanations as well, lest we prove our critics right.

Robert Sheaffer
San Jose, Calif.

Animal rights not our issue?

The intrusion of the animal rights issue into the 1990 CSICOP conference (Fall 1990) appears to be a field strategy that backfired. No doubt the animal research community would like to appropriate CSICOP's prestige in its attempt to characterize animal-rights advocates as irrational kooks.

However, as they were reported by Lys Ann Shore, the arguments by Randall Lockwood of the Humane Society and Donald Barnes of the Anti-Vivisection Society appear more rational than the defensive replies of the animal researchers.

CSICOP stands alone against the flummeries of ESP, UFOs, channeling, psychic surgery, astrology, etc. It would be a pity to see either side of the animal-rights controversy dilute the main thrust of CSICOP. This is a complex issue of ethics, not of delusional systems and gullibility. It does not belong in the pages of the SKEPTICAL INQUIRER.

William Harris, M.D.
Honolulu, Hawaii

The fact that millions of homeless animals are put to death each year makes it difficult to object to procedures carried out under anesthesia. Concerning painful experiments, however (among which

I include depriving animals of water, or placing them in a heat chamber and raising the temperature until they die), some of us hope for a change in the attitude of experimenters. Their argument, essentially, is that even a seemingly pointless experiment is justifiable because no one can prove that it will not somehow lead to useful results. When such claims come from the beneficiaries of government grants and contracts, one need not be exceptionally cynical to receive them with a measure of skepticism.

David A. Shotwell
Alpine, Tex.

Harary corrects record

Robert Sheaffer recently sent me a copy of his "Psychic Vibrations" column from the Summer 1989 SKEPTICAL INQUIRER, to provide me an opportunity to correct some misinformation he gleaned from a misleading article in the *San Jose Mercury News*. According to this article, and Sheaffer's column, Russell Targ claims that in 1979 he hired me to work for the well-known remote-viewing program (of which he also claims to have been co-director) at SRI International. Targ is described as having made the decision to hire me because I claimed to have a psychic relationship with my cat. Sheaffer's column also states that I am suing Targ for using my name in a "National ESP Test" that appeared in *Omni* magazine, describes me as a well-known psychic, twice mentions my old pen-name/nickname of (Stuart) "Blue" Harary (as mentioned in the *Mercury News*), and states that I have achieved considerable fame for alleged out-of-body travels.

Targ has never hired me for any position; nor has he ever supervised any of my professional activities. Harold Puthoff hired me to serve as a psychological consultant to the SRI program, and was the sole founder and director of that program. Puthoff supervised *all* research activities of the SRI program, including those of Targ. Targ was not at SRI when Puthoff conducted the early remote-viewing experiments there. He also later left SRI when, as stated in the enclosed letter from Puthoff, he "had no choice but to leave and seek employment elsewhere."

I do not consider myself to be a "psychic," nor do I believe out-of-body experiences (OBEs) involve physical travel outside of the body. Despite the curious results of the Psychical Research Foundation experiments, I never have claimed to have had a psychic relationship with my cat. I recently co-authored a book describing the OBE as merely an altered state of consciousness. I also have come to consider the whole notion of referring to anyone as a "psychic" to be ill-conceived. And as far as my old nickname goes, I have never understood the fascination some people seem to have for mentioning it. Nicknames are common.

I find myself at odds with many of the contradictory claims that have been made about the silver investment trials carried out by Delphi Associates in 1982, especially those that have been widely published and presented by Targ. My lawsuit against Targ, incidentally, has nothing to do with *Omni*, but instead concerns Targ's use of my name and credentials to promote his mail-order "National ESP Test," in which statements are made implying that I am actively working with Targ and endorse his test, as well as his overall approach and stated conclusions. Unfortunately, I was forced to seek legal remedies to rectify this situation. My participation in the original silver trials did not give Targ, or anyone else, the right to take my name and "presumably do with it what one wishes."

Keith Harary, Ph.D.
2269 Chestnut Street, No. 875
San Francisco, CA 94123

Muslims oppose parlor tricks

Martin Gardner's interesting article about finger-lift levitation ("The Mysterious Finger-Lift Levitation," *SI*, Fall

1990) is spoiled by a needless and incorrect remark at the end. After describing how some Muslims visiting the tomb/shrine of Kamarali Darvesh near Poona take part in raising a large stone ball, Gardner next suggests that these Muslims are "Muslim fundamentalists" who would not be likely to accept a nonmiraculous explanation for the levitation. Unlike most of the other examples of levitation given in the article, the source of this story is not provided.

Gardner does not seem to recognize that the overwhelming majority of so-called Muslim fundamentalists are in fact violently opposed to such "miraculous" displays, and indeed consider the entire phenomenon of saints' cults in the Muslim world to be a perversion of "true" Islamic practice. Like Gardner, these "Muslim fundamentalists" condemn levitatory displays as parlor tricks, and in the past have been very quick to dismiss other similar events as superstitious frauds.

David Damrel
Tucson, Ariz.

Karate strikes

The Fall 1990 "News and Comment" section contained an article, "The Fiercest Punch: The Physics of a Karate Strike," stating that the scientific reason that stacks of boards can be broken at karate demonstrations is that the expert sends a shock wave through the boards. Actually, the preferred method is to first warm them in an oven to completely remove all of their moisture. They can then be easily split by striking them along the grain. Likewise, bricks that are composed of extra sand, a common ingredient in many types of bricks, can also be easily broken. These sensational publicity stunts are performed to impress the gullible in order to entice them to join karate schools.

Striking really hard objects can cause permanent damage to your hand.

Donald F. Nigroni
Glenolden, Pa.

Monstrous 'merely'?

The Fallacy of the Monstrous "Merely" pops up more often than one might suspect. For example, of all the articles in this journal exposing the "backward masking" nonsense, none ever bothered to explain just how one "merely" plays a record or tape backward. I have had fairly sophisticated audio systems for 35 years, but haven't the faintest idea how to do what our satanically befuddled teens must be doing routinely.

Now, a latter-day hero, Martin Gardner, unveils the Mysterious Finger-Lift Levitation (*SI*, Fall 1990) by explaining that, for a 200-pound subject, ". . . each lifter has to raise a mere 50 pounds. . . ." The lifters in the text were often small children. Recalling my own springtime tussles with 40-pound bags of topsoil, perhaps someone could explain how one extended index finger is supposed to casually hoist "a mere 50 pounds."

Tony Pasquarello
Department of Philosophy
Ohio State University
Mansfield, Ohio

The letters column is a forum for views on matters raised in previous issues. Brief letters (less than 250 words) are welcome. We reserve the right to edit longer ones. They should be typed double-spaced. Due to the volume of letters, not all can be published. Address them to Letters to the Editor, SKEPTICAL INQUIRER, 3025 Palo Alto Dr. NE, Albuquerque, NM 87111.

CSICOP News

CSICOP Clarifies New Ventures

During the past year, CSICOP has embarked on a number of new projects, despite the prospect of a recession. The conference and seminar schedule has grown, the first steps have been taken toward a permanent skeptical voice on public radio, and the construction of our new headquarters is well under way.

This is an appropriate time to clarify structures old and new, and to announce name changes that we hope will forestall future confusion.

The Center for Inquiry (headquarters complex). Several initiatives have been announced under the umbrella name *Center for Inquiry.* Henceforth that name will apply only to the new headquarters complex now under construction in Amherst, New York, immediately adjacent to the North Campus of the State University of New York at Buffalo. The first of two buildings on the site is now completed. Fund-raising continues for the more ambitious Phase II building, which will incorporate a permanent research library, seminar rooms, and additional office space. In order to increase efficiency and reduce costs, CSICOP is building this facility in cooperation with the Council for Democratic and Secular Humanism (CODESH), publisher of *Free Inquiry* magazine.

The Institute for Inquiry (educational programs). CSICOP has sponsored conferences, seminars, and other educational programs for many years. CODESH has done the same. The two organizations have now pooled their administrative capabilities to launch these educational projects in a more formal framework under the name Institute for Inquiry. (This name supersedes the name Center for Inquiry Institute, which appeared on some informational material.) The Institute for Inquiry will provide a structure in which CSICOP can independently increase the scope of its educational offerings. The ultimate goal is to achieve accreditation for Institute for Inquiry courses. CSICOP will continue to select its own faculty and design its own curricula.

Inquiry Media Productions (radio/video outreach). CSICOP and CODESH have also shared in funding a radio-video production facility, which also operated as the Center for Inquiry. This entity, now called Inquiry Media Productions, will continue the production of the public-radio magazine program, "The Voice of Inquiry," and will produce an assortment of video projects.

These are the structures through which CSICOP will develop in the years to come. Helping to shape so many new initiatives has been exciting. We hope the "birth pangs" have not been too confusing to our readers and friends.

—*Paul Kurtz*

INSTITUTE FOR INQUIRY

Summer Session 1991 — Wed.-Sun., June 19-23
at the State University of New York at Buffalo

The Institute for Inquiry is jointly supported by CSICOP and CODESH, two scientific and educational nonprofit organizations. The Institute offers courses and curricula to develop knowledge and appreciation of skepticism, rationalism, free thought, and scientific modes of inquiry. The Summer session will offer three courses: Case Studies in the Paranormal (CSICOP), Evolution vs. Creationism (CSICOP-CODESH), and Humanist Ethics (CODESH). Participants can register for one course ($125), two courses ($225), or three courses ($300). Accommodations, meals, and textbooks are not included.

Wednesday, June 19

7:00-10:00 P.M.: Reception

Thursday, June 20

9:00 A.M.-12:00 NOON: Humanist Ethics

Paul Kurtz, professor of philosophy, SUNY at Buffalo
Marvin Kohl, professor of philosophy, State University of New York College at Fredonia
Tim Madigan, executive editor, FREE INQUIRY

12 NOON-1:00 P.M.: Luncheon Break

1:00-4:00 P.M.: Evolution vs. Creationism

Eugenie Scott, physical anthropologist, executive director, National Center for Science Education
H. James Birx, professor of anthropology, Canisius College

4:30-7:30 P.M.: Case Studies in the Paranormal

James Randi, author, magician
Steve Shaw, magician

7:30-10:00 P.M.: Dinner and Open Forum

Friday, June 21

Courses continue; repeat of Thursday schedule.

Saturday, June 22

8:30-10:00 A.M.: Humanist Ethics (continued)
10:00-11:30 A.M.: Evolution vs. Creationism (continued)
11:30A.M.-1:00 P.M.: Case Studies in the Paranormal (continued)
1:00-10:00 P.M.: Canadian trip (optional)
A visit to Niagara Falls and to the Shaw Festival Theatre at Niagara-on-the-Lake, Ontario, Canada

Sunday, June 23

9:00A.M.-12 NOON: Humanist Ethics (continued)
12 NOON-1:00 P.M.: Luncheon
1:00-4:00 P.M.: Evolution vs. Creationism (continued)
4:30-7:30 P.M.: Case Studies in the Paranormal (continued)
7:30-10:00 P.M.: Dinner and entertainment

For registration form and accommodations information, contact Barry Karr, CSICOP, Box 229, Buffalo, NY 14215, 716-834-3222.

Local, Regional, and National Organizations

The organizations listed below have aims similar to those of CSICOP and work in cooperation with CSICOP but are independent and autonomous. They are not affiliated with CSICOP, and representatives of these organizations cannot speak on behalf of CSICOP.

UNITED STATES

ALABAMA. Alabama Skeptics, Emory Kimbrough, 3550 Watermelon Road, Apt. 29A, Northport, AL 35476.

ARIZONA. Tucson Skeptical Society (TUSKS), James McGaha, Chairman, 2509 N. Campbell Ave., Suite #16, Tucson, AZ 85719. **Phoenix Skeptics,** Michael Stackpole, Chairman, P.O. Box 62792, Phoenix, AZ 85082-2792.

CALIFORNIA. Bay Area Skeptics, Rick Moen, Secretary, 4030 Moraga, San Francisco, CA 94122-3928. **Berkeley Skeptics,** Daniel Bain, Contact, U.C. Berkeley, 300 Eshleman Hall, Berkeley, CA 94720. **East Bay Skeptics Society,** Daniel Sabsay, President, P.O. Box 20989, Oakland, CA 94620. **Sacramento Skeptics Society,** Bob Lee, President, 1417 57th St., Sacramento, CA 95819. **Southern California Skeptics,** Susan Shaw, Secretary, P.O. Box 5523, Pasadena, CA 91107; San Diego Coordinator, Ernie Ernissee, 5025 Mount Hay Drive, San Diego, CA 92117.

COLORADO and WYOMING. Rocky Mountain Skeptics, Béla Scheiber, President, P.O. Box 7277, Boulder, CO 80306.

DISTRICT OF COLUMBIA, DELAWARE, MARYLAND, and VIRGINIA. National Capital Area Skeptics, c/o D. W. "Chip" Denman, 8006 Valley Street, Silver Spring, MD 20910.

FLORIDA. Tampa Bay Skeptics, Gary Posner, 6219 Palma Blvd., #210, St. Petersburg, FL 33715.

GEORGIA. Georgia Skeptics, Correspondence Secretary, P.O. Box 654, Norcross, GA 30091.

ILLINOIS. Midwest Committee for Rational Inquiry, Lawrence Kitsch, President, P.O. Box 2792, Des Plaines, IL 60017-2792.

INDIANA. Indiana Skeptics, Robert Craig, Chairperson, 5401 Hedgerow Drive, Indianapolis, IN 46226.

KENTUCKY. Kentucky Assn. of Science Educators and Skeptics (KASES), Chairman, Prof. Robert A. Baker, 3495 Castleton Way North, Lexington, KY 40502.

LOUISIANA. Baton Rouge Proponents of Rational Inquiry and Scientific Methods (BR-PRISM), Henry Murry, Chairman, P.O. Box 15594, Baton Rouge, LA 70895.

MASSACHUSETTS. Skeptical Inquirers of New England, Laurence Moss, Chairman, c/o Ho & Moss, Attorneys, 72 Kneeland St., Boston, MA 02111.

MICHIGAN. MSU Proponents of Rational Inquiry and the Scientific Method (PRISM), Dave Marks, 221 Agriculture Hall, Michigan State Univ., East Lansing, MI 48824. **Great Lakes Skeptics,** Don Evans, Chairman, 6572 Helen, Garden City, MI 48135.

MINNESOTA. Minnesota Skeptics, Robert W. McCoy, 549 Turnpike Rd., Golden Valley, MN 55416. **St. Kloud ESP Teaching Investigation Committee** (SKEPTIC), Jerry Mertens, Coordinator, Psychology Dept., St. Cloud State Univ., St. Cloud, MN 56301.

MISSOURI. Kansas City Committee for Skeptical Inquiry, Verle Muhrer, Chairman, 2658 East 7th, Kansas City, MO 64124. **Gateway Skeptics,** Chairperson, Steve Best, 6943 Amherst Ave., University City, MO 63130.

NEW MEXICO. New Mexicans for Science & Reason, John Geohegan, Chairman, 450 Montclaire SE, Albuquerque, NM 87108; John Smallwood, 320 Abbott Road, Santa Fe, NM 87501.

NEW YORK. Finger Lakes Association for Critical Thought, Ken McCarthy, 107 Williams St., Groton, NY 13073. **New York Area Skeptics** (NYASk), William Wade, contact person, 97 Fort Hill Road, Huntington, NY 11743-2205. **Western New York Skeptics,** Tim Madigan, Chairman, 3159 Bailey Ave., Buffalo, NY 14215.

NORTH CAROLINA. N.C. Skeptics, Michael J. Marshall, Pres., 3318 Colony Dr., Jamestown, NC 27282.

OHIO. South Shore Skeptics, Page Stephens, Box 5083, Cleveland, OH 44101

PENNYSYLVANIA. Paranormal Investigating Committee of Pittsburgh (PICP), Richard Busch, Chairman, 5841 Morrowfield Ave., #302, Pittsburgh, PA 15217. **Delaware Valley Skeptics,** Brian Siano, Secretary, Apt. 1-F, 4406 Walnut St., Philadelphia, PA 19104.

SOUTH CAROLINA. South Carolina Committee to Investigate Paranormal Claims, John Safko, 3010 Amherst Ave., Columbia, SC 29205.

TENNESEE. Tennessee Valley Skeptics, Daniel O'Ryan, Secretary, P.O. Box 50291, Knoxville, TN 37950.

TEXAS. Austin Society to Oppose Pseudoscience (ASTOP), Lawrence Cranberg, President, P.O. Box 3446, Austin, TX 78764. **Houston Association for Scientific Thinking** (HAST), Darrell Kachilla, P.O. Box 541314, Houston, TX 77254. **North**

(continued on next page)

Texas Skeptics, John Blanton, President, P.O. Box 111794, Carrollton, TX 75011-1794. **West Texas Society to Advance Rational Thought,** Co-Chairmen: George Robertson, 6500 Eastridge Rd., #73, Odessa, TX 79762-5219; Don Naylor, 404 N. Washington, Odessa, TX 79761.

WASHINGTON. Society for Sensible Explanations, Philip Haldeman/Michael Dennett, T.L.P.O. Box 8234, Kirkland, WA 98034.

WISCONSIN. Wisconsin Committee for Rational Inquiry, Mary Beth Emmericks, Convenor, 8465 N. 51st St., Brown Deer, WI 53223.

ARGENTINA. CAIRP, Director, Ladislao Enrique Maiquez, Jose Marti, 35 dep C, 1406 Buenos Aires.

AUSTRALIA. National: **Australian Skeptics,** P.O. Box E324 St. James, NSW 2000. Regional: **Australian Capital Territory,** P.O. Box 555, Civic Square, 2608. **Newcastle Skeptics,** Chairperson, Colin Keay, Physics Dept., Newcastle University, NSW 2308. **Queensland,** P.O. Box 2180, Brisbane, 4001. **South Australia,** P.O. Box 91, Magill, 5072. **Victoria,** P.O. Box 1555P, Melbourne, 3001. **Western Australia,** 25 Headingly Road, Kalamunda, 6076.

BELGIUM. Committee Para, J. Dommanget, Chairman, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels. **SKEPP,** Tim Trachet, Chairman, de Smet de Naeyerlaan 167, 1090 Brussels.

CANADA. National: Chairman, James E. Alcock, Glendon College, York Univ., 2275 Bayview Avenue, Toronto, Ontario. Regional: **Alberta Skeptics,** Elizabeth Anderson, P.O. Box 5571, Station A, Calgary, Alberta T2H 1X9. **British Columbia Skeptics,** Barry Beyerstein, Chairman, Box 86103, Main PO, North Vancouver, BC, V7L 4J5. **Manitoba Skeptics,** Bill Henry, President, Box 92, St. Vital, Winnipeg, Man. R2M 4A5. **Ontario Skeptics,** Henry Gordon, Chairman, P.O. Box 505, Station Z, Toronto, Ontario M5N 2Z6. **Quebec Skeptics:** Jean Ouellette, C.P. 282, Repentigny Quebec, J6A 7C6.

FINLAND. Skepsis, Matti Virtanen, Secretary, Kuismakuja 1S18, SF-00720 Helsinki.

FRANCE. Comité Français pour l'Etude des Phénomènes Paranormaux, Claude Benski, Secretary-General, Merlin Gerin, RGE/A2 38050 Grenoble Cedex.

GERMANY. East German Skeptics, A. Gertler, Chairman, Inst. for Forensic Medicine, Humboldt Univ., Berlin 1040. **Society for the Scientific Investigation of Para-Science** (GWUP), Amardeo Sarma, Convenor, Postfach 1222, D-6101 Rossdorf.

INDIA. B. Premanand, Chairman, 10, Chettipalayam Rd., Podanur 641-023 Coimbatore Tamil nadu. For other Indian organizations contact B. Premanand for details.

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